

EXCAVATIONS AT QALAT SAID AHMADAN, SLEMANI, IRAQ-KURDISTAN: FIRST INTERIM REPORT (2014 SEASON)

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1. Introduction

At one point in time, the Iraq-Kurdistan region, located along the eastern part of the Fertile Crescent, was one of the most fascinating archaeological zones for the study of human history. The first systematic archaeological research in Iraq-Kurdistan was initiated in the 1920s by foreign archeologists such as Ephraim A. Speiser in the Slemani region and Dorothy Garrod at the Zarzi and Hazarmerd caves near Slemani [Speiser 1926–1927; Soleki 1952]. This reached a peak during the 1940s and 1950s, following Word War II. The region was renowned for two remarkable research projects. The first comprises the discovery and excavation of Jarmo in Chemchemal, by Robert J. Braidwood of the Chicago University [Braidwood and Howe 1960]. The second consisted of excavations at Shanidar Cave, a famous Paleolithic site in the Zagros Mountains, by Ralph Soleki, beginning in 1951 and continuing for over a decade [Soleki *et al.* 2004].

Iraq-Kurdistan became one of the most promising archaeological regions for the study of Neolithization after Braidwood's research. This Jarmo Prehistoric Project was the first comprehensive scientific research investigating how and why people adopted a new way of life, *i.e.*, of farmers and herders. The team excavated Jarmo, Karim Shahir, Matarrah, Tell M'lefaat, and other important prehistoric sites in Iraq-Kurdistan. Their research resulted in constructing fundamental data on the process of Neolithization and on subsequent social developments in Near Eastern prehistory [Braidwood and Howe 1960; Braidwood *et al.* 1983]. Danish excavations at Shimshara in the Ranya Plain in 1957 and 1959, also yielded information on developed farming societies, termed the Hassuna culture [Mortensen 1970]. Based on these results, most scholars believed that the eastern part of the Fertile Crescent in the Zagros region, especially Slemani and Iraq-Kurdistan, was the most important archaeological region for studying the great transition from hunter-gatherers to farmer-herders in prehistory.

In addition to these prehistoric investigations, one should note important work on later periods, including extensive surveys and some excavations around Slemani. Extensive surveys of the Ranya Plain in the Slemani region were carried out by the Iraqi Directorate of Antiquities and Heritage as a part of a salvage project prior to the construction of dams and reservoirs at Dokan in the 1950s. Some sites, such as Basmusian, Shimshara, Kamarian, ed-Dem and Qarashina were excavated. A Danish expedition collaborated in the project at Shimshara [Ingholt 1957; Laessøe 1959; Soof 1970]. The Shahrizor area was also surveyed by the Iraqi Directorate of Antiquities and Heritage, initially in 1943 and 1946–48. Subsequently, in 1960–1961, some sites were subjected to salvage operations by the Iraqi Directorate General of Antiquities, when the Darband-i Khan dam was constructed [Altaweel *et al.* 2012; Soof 1964]. However, from the 1960s onwards until 1974, few archaeological

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excavations were undertaken in Iraq-Kurdistan, including the Slemani region [Salmon 1973; Hijara 1975].

The political situation in Iraq became a major obstacle for further scientific activities in Iraq-Kurdistan, from the middle of the 1970s onwards. Most foreign archeologists had to shift their research and fields of study to other regions in the Near East such as the Levant and Anatolia. Concerning about the Neolitization studies, archeologists actively excavated many important Epi-Paleolithic and Neolithic sites in these regions. The Levant and southeast Anatolia, especially the Levantine Corridor [Bar-Yosef and Meadow 1995] and the Golden Triangle [Kozłowski and Aurenche 2005], became the focus for the study of the Neolithization. Prehistoric archeologists discovered the “oldest” evidence of farming settlements with domesticated plants and animals in these regions. Therefore, scholars were motivated to believe that the western and northern parts of the Fertile Crescent were the original zones for a new way of life involving farming.

However, there was no definite evidence as to the accuracy of this new hypothesis, as the eastern part of the Fertile Crescent, the Zagros region, remained unexplored from the middle of the 1970s onwards. After a long struggle, Iraq-Kurdistan experienced significant changes in last few decades. The end of the Gulf War in 1991, followed by the Kurdish uprising against the Iraqi government, resulted in the establishment of the Kurdistan Regional Government (KRG) in 1992 [MacDowall 2004]. In particular, after the fall of the previous regime in 2003, Iraq-Kurdistan began to enjoy a high degree of autonomy, and to achieve social and political stability. At the same time, it has been a definitive moment for archaeological research in the region under the initiative and support of the Directorate-General of Antiquity of the KRG.

After 2010 a new page of archaeological research opened in Iraq-Kurdistan. Due to political stability of the region, many archaeological regional surveys and excavations begun to initiate in the region (Kopaniias *et al.* 2015). The period in focus was in a wide range from the Neolithic to the Ottoman period. Apart from the Neolithic period, Bronze Age (3rd-2nd millennia BC) has been one of the main focuses of the investigation. For example, large city-scale sites like Bakr Awa in the Shahrizor plain (Miglus *et al.* 2013), Tell Shimshara in the Ranya plain (Eidem 2012), and Qasr Shemamouk in the Erbil plain (Rouault *et al.* 2014) have been excavated. The regional surveys in the Erbil, Slemani, and Dohuk regions have been conducted utilizing various sophisticated methods including satellite images and systematic sampling of surface scattered artifacts (*e.g.* Altaweel *et al.* 2012, Ur *et al.* 2013). Kurdish archaeologists also began new excavations at some important sites, including Tell Sitak which produced Assyrian inscriptions (Saber, Hamza and Altaweel in press). The past few years saw the “boom” of Kurdistan archaeology which are now considered by many scholars as a new frontier of Near Eastern archaeology.

New archaeological investigations, which focused on the question of Neolithization, were also started in the Zagros area, including Iraq-Kurdistan, in the late 2000s. A team from Tübingen University excavated Chogha Golan in the Iranian Zagros, and reported one of the oldest evidences of domesticated cereal grains dating back to 10,000–8000 BC [Riehl *et al.* 2013]. A team from the University of Reading and Tehran University excavated the site of Sheikh-e Abad near Kermanshah and revealed an old farming settlement [Matthews *et al.* 2013]. The team from the University of Reading also started a new project in Iraq-Kurdistan, in collaboration with the Slemani Directorate-General of Antiquities, for excavations at the site of Bestansur in the Shahrizor Plain. Results of these new investigations in the Zagros region inform us that the eastern part of the Fertile Crescent provides evidence of farming villages, as old as and contemporary with, their western counterparts in the Levant and Southeast Anatolia.

Therefore, if we wish to understand the whole Neolithization process in the Near East, we would need to expand archaeological investigations into the eastern part of the Fertile Crescent. Iraq-Kurdistan is not only located at the heart of this part, but also constitutes an area where the study

of the Neolithization process was started for the first time in the 1940s. We believe that numerous well-preserved Neolithic sites will be discovered in Iraq-Kurdistan, especially Slemani area, providing further information on the Neolithization process and of succeeding complex societies.

(A. Tsuneki, K. Rasheed and M. Makino)

2. Archaeological surveys

The purpose of our research is to investigate a series of Neolithic sites in Slemani region, in order to study the Neolithization process and subsequent social development in the heart of the eastern part of the Fertile Crescent. To achieve this aim, we initiated a preliminary survey in Slemani region (Fig. 2.1). Owing to the kind permission and support of the Slemani Directorate of Antiquities, we investigated prehistoric sites from March 3–12, 2014.

The survey was mainly conducted in two areas, the Ranya-Pshdar Plains in the north and the Shahrizor Plain in the south. The survey was conducted by visiting sites previously recorded by the Iraqi Government in the 1970s and by the Slemani Directorate of Antiquities with Erbil-Institut français du Proche-orient in the early 2010s. We visited 19 tell sites during our survey with our colleagues at the Slemani Directorate of Antiquities (Figs. 2.2, 2.3). In addition to excavated sites in the surveyed area such as Bestansur, we identified material cultural remains of the Neolithic period, especially the Hassuna period, at four sites: Tell Raza (No. 7) and Shakar Tepe (No. 12) in the Shahrizor Plain, and Boskin (No. 17) and Qalat Said Ahmadan (No. 19) in the Ranya-Pshdar Plains (No. 19). In general, as per our survey, Neolithic occupation is rare in tell sites in the surveyed areas. Three of the four tell sites are located in the plains and not in the foothill zone of the mountains. Thus, we presume that in order to identify the earliest Neolithic sites we should intensively investigate

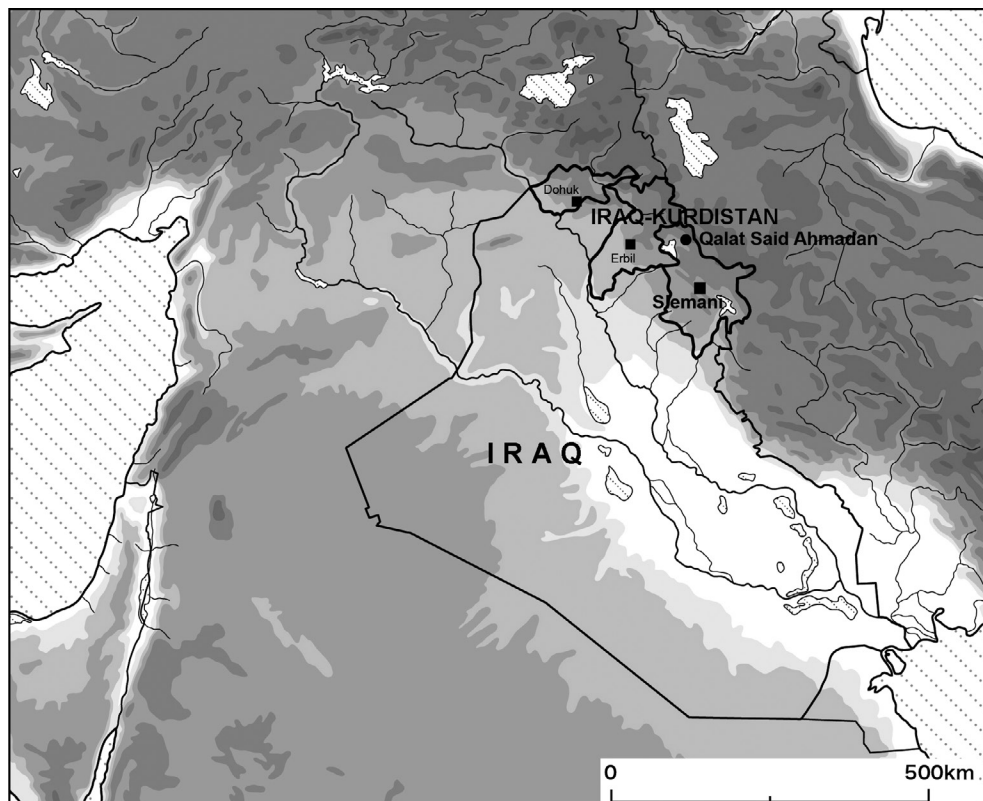


Fig. 2.1 Location of Iraq-Kurdistan and Slemani district

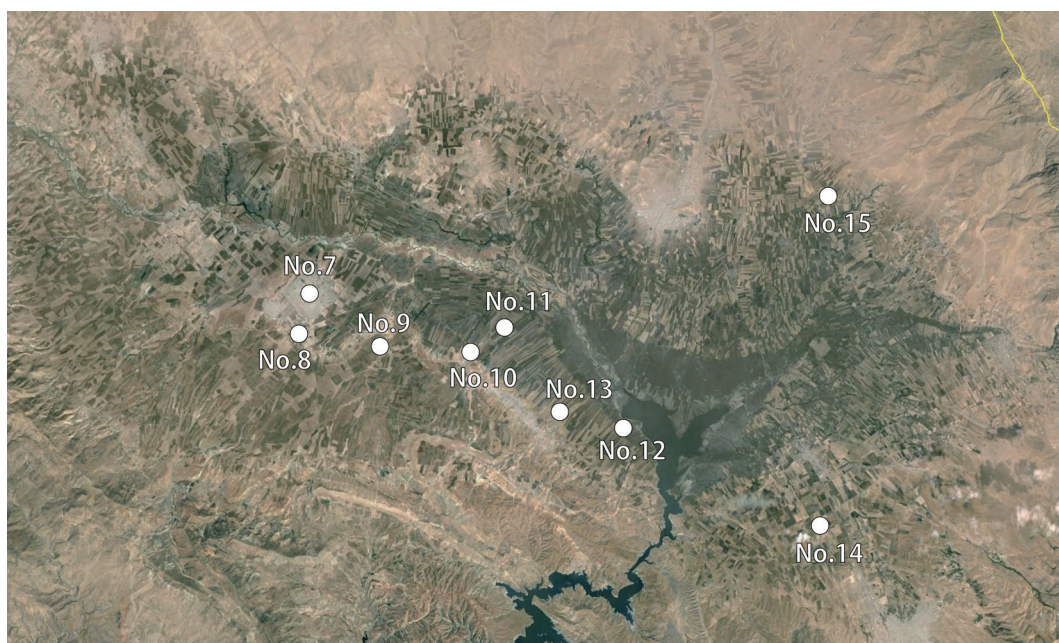


Fig. 2.2 Surveyed sites in the Shahrizor Plain (image from Google Earth)
No. 7. Tell Raza; No. 8. Caani Rash; No. 9. Quchika Tepe; No. 10. Tell Hassil; No. 11. Tell Haji; No. 12. Shakar Tepe; No. 13. Qalbaza Tepe; No. 14. Bakr Awa; No. 15. Tell Qulkhurd



Fig. 2.3 Surveyed sites in the Ranya – Pshdar Plains (image from Google Earth)
No. 4. Tell Bengel; No. 5. Qala Tepe; No. 6. Tell Shimshara; No. 16. Ibrahim Kachal; No. 17. Boskin; No. 18. Ali Awa; No. 19. Qalat Said Ahmadan

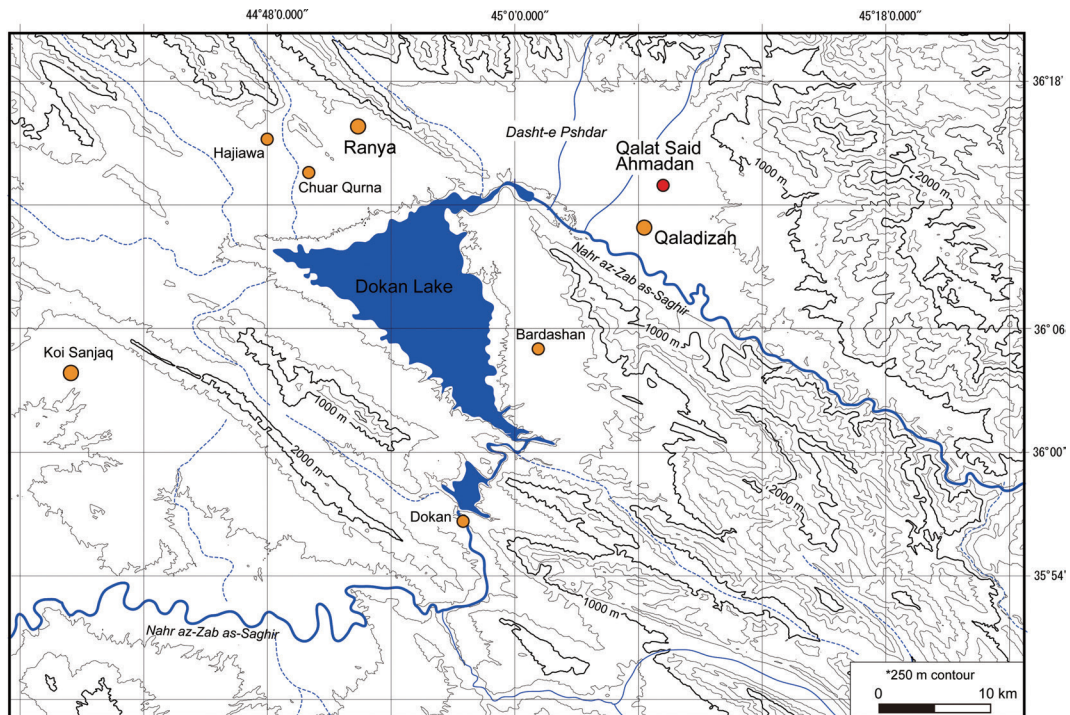


Fig. 2.4 Location of Qalat Said Ahmadan in the Dokan Lake area



Fig. 2.5 General view of Qalat Said Ahmadan (from the east)

open-air sites along the foothills. Most early tells discovered by us appear to be well-developed farming villages.

Amongst these Neolithic sites, only Qalat Said Ahmadan (No. 19) near Qaladizah is located in the foothills (Figs. 2.4, 2.5). We could collect considerable quantities of Neolithic potsherds, as also those of the Chalcolithic, Bronze and Iron Ages. Most prehistoric potsherds were collected on the southern slope, and this part of the mound appears to have been occupied mainly during the Neolithic. A topographic map of this site was prepared using a total station and GPS.

We presumed that initiation of archaeological investigations at Qalat Said Ahmadan, would result in obtaining a good cultural sequence of the Neolithic, with the possibility of pre-dating the Hassuna period, and later periods, as well as considerable information for the study of the Neolithization process and development of early farming societies. A good strategy is to begin with trial trench excavations along the southern slope of the mound.

These investigations would contribute to constructing a local chronology, not only for the Ranya-Pshdar plains, but also for the Slemani region as a whole. The establishment of a local chronology is very important for any further investigations, including general surveys and regional studies of the Slemani region.

Unfortunately, the northern part of the mound at Qalat Said Ahmadan, is facing rapid destruction, owing to expansion of the village of Said Ahmadan located to its south. Therefore, our investigations at the site are not only an academic research exercise but also constitute salvage operations.

The aims of our archaeological investigations at Qalat Said Ahmadan are summarized as follows:-

- 1) Promotion of studies on the Neolithization process and the development of early social complexity in Kurdistan.
- 2) Establishment of a local chronology following the Neolithic.
- 3) Initiating efforts at site conservation to protect it from ongoing destruction.

(A. Tsuneki, S. Nishiyama, S. A. Saber and A. Hasegawa)

3. Geomorphological, sedimentological and paleo-environmental reconnaissance around the Qalat Said Ahmadan

Qalat Said Ahmadan (QSA in Fig. 3.1) was built near the hinge of a broad alluvial fan, with its slope dipping gently to the southwest. Because of its high elevation, the site has an open view to the southwest, to the gorge where the Lower Zab River transects a NW-SE-trending ridge and winds its way into the Ranya basin. Several terraces of unknown age were observed around Qalat Said Ahmadan.

Three terraces (HTs, and T_1 to T_3 in Fig. 3.1.a and b, respectively) at different levels are distributed on the lee-side (southwest) of the alluvial fan, and have higher elevations than the down-slope surface of the fan. Streams north and south of the mound meet in front of these terraces and dissect them to meet with the main stream of the Lower Zab River to the south.

There seems to be two possible accounts for the presence of the high-level terraces in the west: one is sedimentary, and the other tectonic. The sedimentary hypothesis for the high terraces requires several large aggradation events along the Lower Zab River, or its tributaries. This would require a high rate of sediment supply due to high precipitation and/or rapid uplift of the Zagros Mountains. In contrast, the tectonic hypothesis assumes that an NNW-SSE trending active fault uplifted the western block, which was later incised by the westward flowing streams. Further investigation is necessary to understand which mechanism was involved.

Streams on both sides of the mound incised the alluvial fan deposits, and formed a narrow terrace (T_4) in the incised valley. The T_4 terrace is the flood-plain deposit of a meandering stream that incised

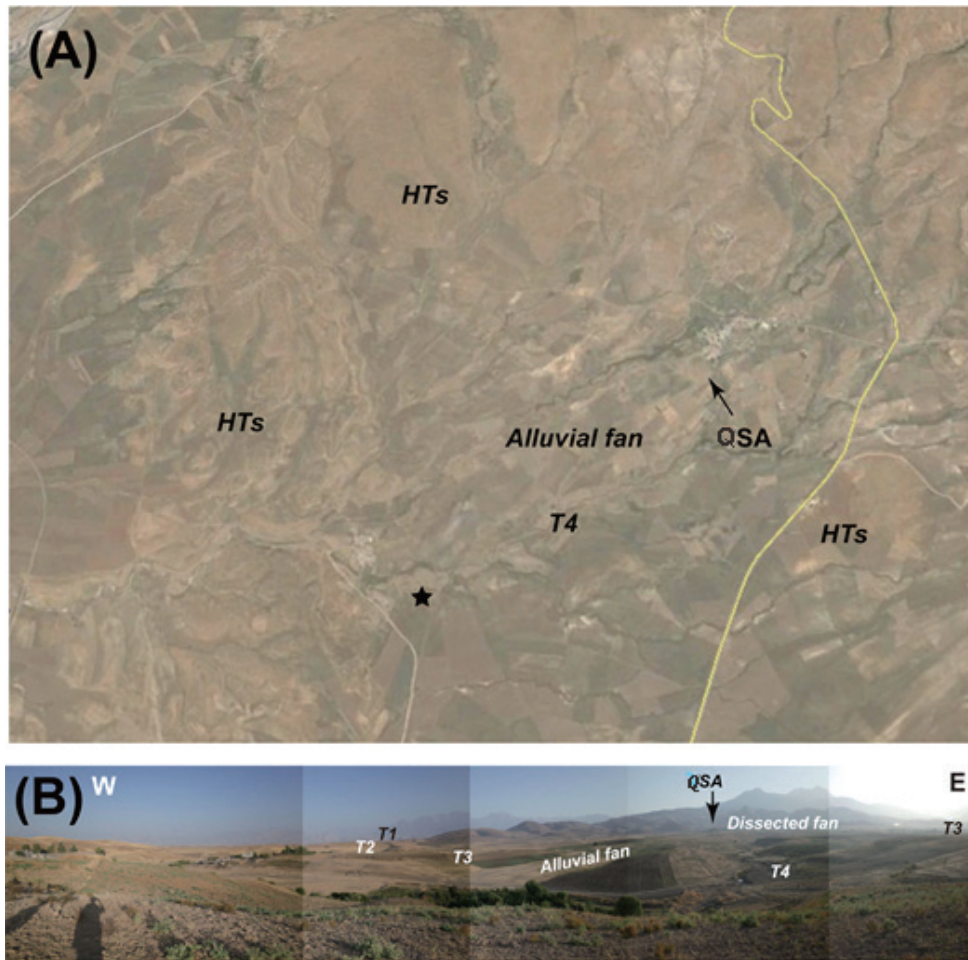


Fig. 3.1 Location of Qalat Said Ahmadan (QSA) and distribution of alluvial fan deposits and terraces (a). A panoramic photo (b) was taken from the location marked by star. The figure was modified based on a satellite image from Google Earth



Fig. 3.2 Carbonate crust covering the T₃ surface



Fig. 3.3 Virgin soil underneath the building stones, with plastic cubes for anisotropy of magnetic susceptibility measurement

the alluvial fan deposits. Sediments underneath the T₄ terrace were observed to be mostly conglomerates, occasionally interbedded with sandy layers. The stream valley southeast of the mound is asymmetrical, with a gently dipping north slope and steeply dipping southern slope. Such asymmetry implies that the channel recently migrated from north to south, and that the most recent incision took place mainly in the southern part of the T₄ terrace, leaving point-bar sediments behind (on the northern slope). Thus, it was suspected that the stream was located closer to the Tell when the first settlement occurred in this area.

Pore spaces of conglomerates are often cemented by carbonate minerals near the surface of the Quaternary deposits (Fig. 3.2). Such carbonate crusts, referred to as caliche, are common in arid regions, and are formed due to interaction between groundwater saturated with Ca and atmospheric CO₂. The presence of a carbonate crust implies that the surface was exposed for a relatively long period, under conditions of aridity and relatively high water table.

Carbonate crusts were observed at the top of the alluvial fan deposits underneath Qalat Said Ahmadan. Coring through virgin soils from the base of the Operation A, a caliche layer was reached 60 cm below the base. Impermeable carbonate crusts near the surface of the alluvial fan deposits may have worked as good barriers preventing rainwater from penetrating the soil and moving underground. The virgin soils consist of rather massive, dark-brownish clay materials (Fig. 3.3), and contain no archaeological remains. This implies sedimentation in a still-water environment. Thus, the Operation A remains were built during, or just after, a rather wet period that followed the dry period during which the carbonate crusts formed.

(Ryo Anma)

4. The site of Qalat Said Ahmadan and the first season of excavation

The site of Qalat Said Ahmadan (N36° 13' 30.32" E45° 08' 48.75") is located at the foothill of a mountain, immediately to the south of Said Ahmadan village, around 3.5 km north of Qaladizah town, in the Pshder Plain (Fig. 4.1). It is locally referred to as Qalat (castle), and was registered with the name Qalat Said Ahmadan. The cultural horizons appear to rest on natural fan deposits, sloping from the northeast to the southwest (Fig. 4.2). The mound has an oval plan, measuring 160 × 170 m, with a trapezoidal profile and steep slopes (Fig. 4.3). The height at the surface of the mound is 719 m asl and the base is at 697 m asl. Therefore, the mound rises to a height of 22 m above the surrounding plain. The surface is flat and slopes slightly towards the north. The northern part of the foot of the mound is intensively destroyed by houses of the modern village. However, the southern part of the mound is almost completely preserved. On the southern slope, we were able to collect a fairly large number of potsherds indicative of a chronological sequence ranging from the prehistoric to historical periods, and including Hassuna-Samarra wares.

Therefore, we chose the southern slope of Qalat Said Ahmadan for our excavations. To proceed in a scientific manner, we excavated sounding trenches along the north-south axis of the southern slope of the mound. We set the Bench Mark 0 (BM 0) on the southern edge of the flat summit of the mound. The piles of BM 20, 40 and 60 were set at 20, 40 and 60 m south of this. Three trenches

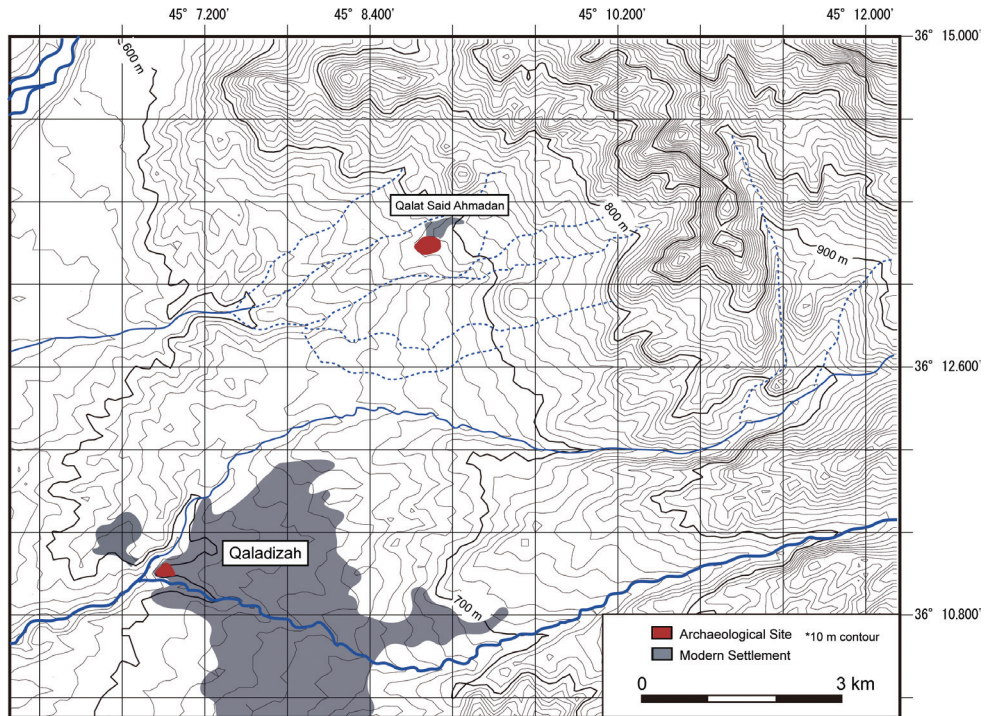


Fig. 4.1 Topographic map around Qalat Said Ahmadan

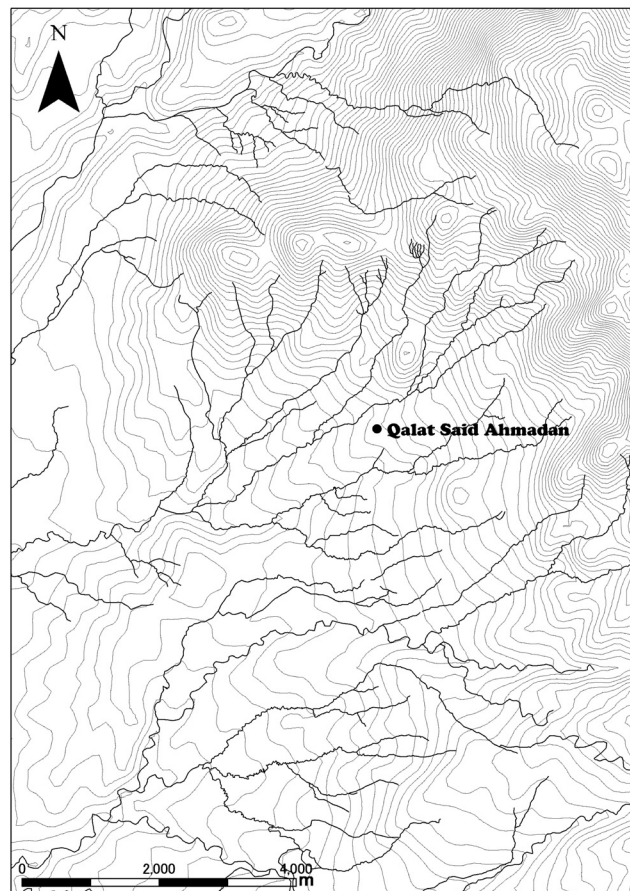


Fig. 4.2 Detailed topographic map around Qalat Said Ahmadan, which shows its location on the fan deposits inclining from the northeast to the southwest



Fig. 4.3 General view of the excavations at Qalat Said Ahmadan (from the south)

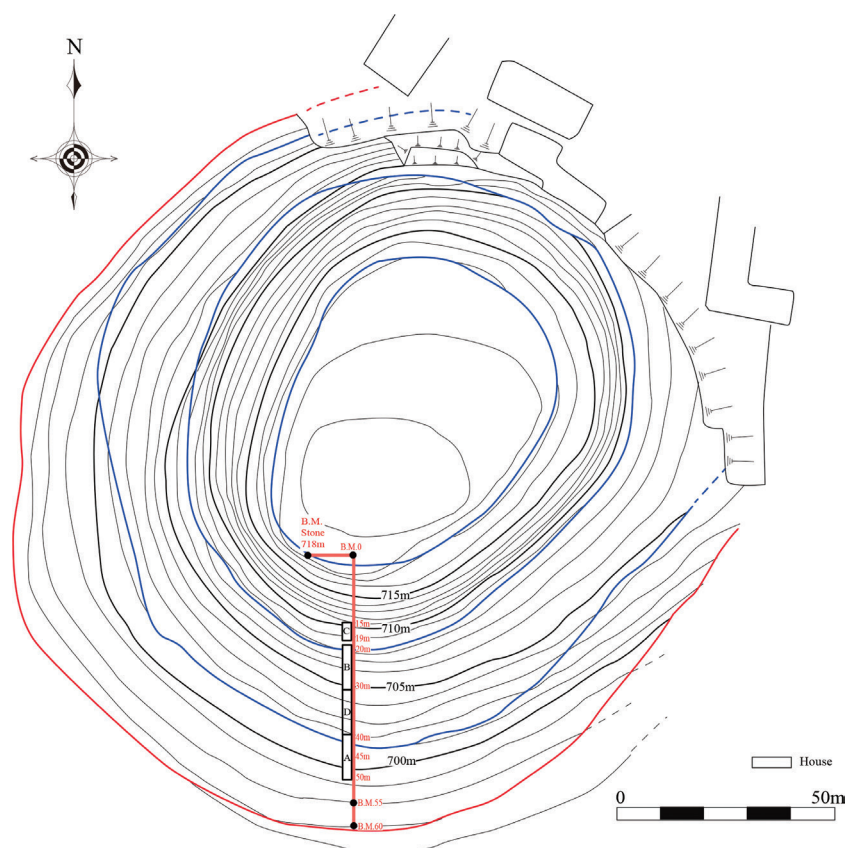


Fig. 4.4 Topographical map of Qalat Said Ahmadan and the locations of Operations

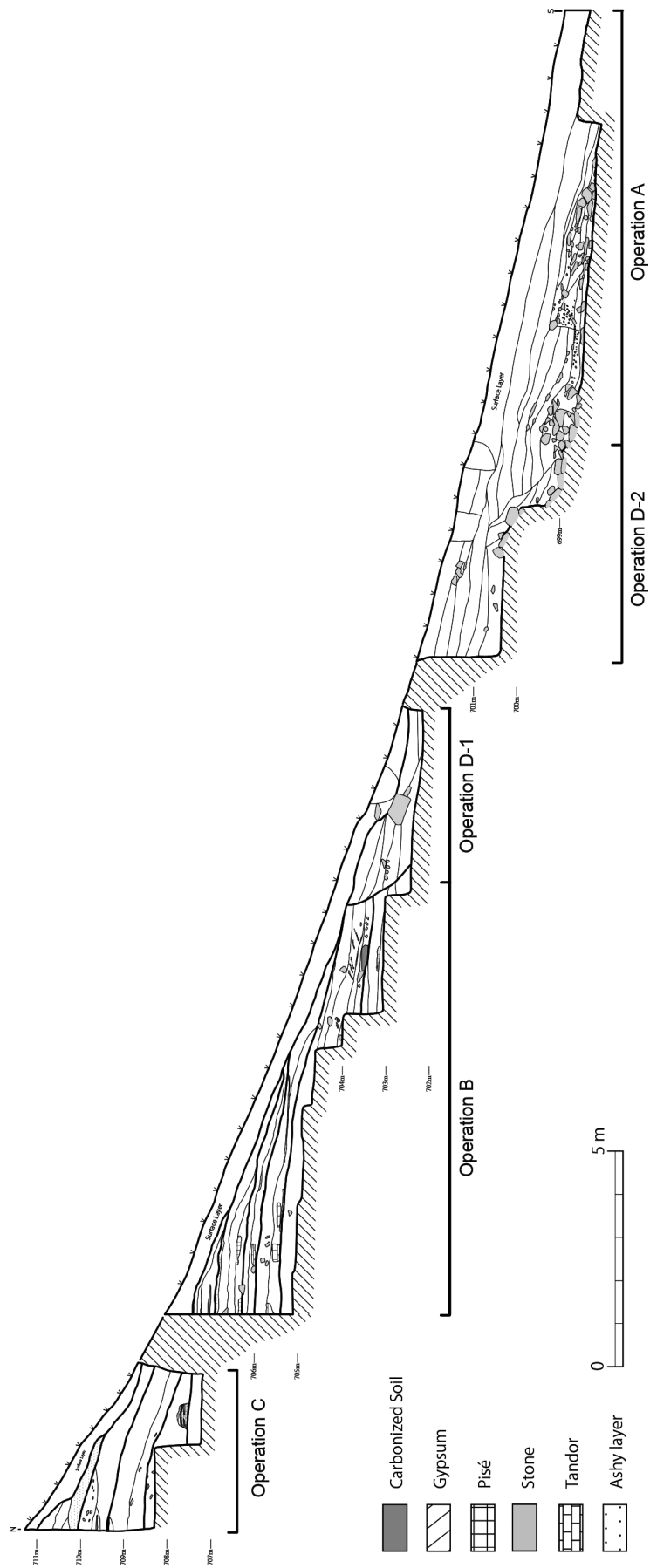


Fig. 4.5 East wall section of the Operations C, B, D, and A

of 2×10 m each and one trench of 2×4 m, termed “Operations” A, B, D and C were laid out and dug down (Figs. 4.4, 4.5). The first archaeological investigation at Qalat Said Ahmadan extended from August 20 to September 30, 2014. The results of the excavations are discussed below.

(A. Tsuneki, S. A. Saber, S. Nishiyama, B. B. Ismail and S. Jammo)

5. Operation B

Operation B was a 2 m (EW) \times 10 m (NS) trench excavated in the middle of the southern slope. It was excavated with the aim of investigating the nature of transition from the prehistoric to historic phases. However, almost all material discovered from this trench, belongs to the Neolithic. The northern edge of the trench was excavated to a depth of 2.9 m (708.1–705.2 m asl) and its southern edge was dug to a depth of 1.7 m (704.2–702.5 m asl) below the surface. At the southern end of this trench, we reached natural fan deposits, consisting of dull greenish-brown soil, at an altitude of 702.85 m. This suggests that the first Neolithic settlement at Qalat Said Ahmadan was established on natural fan deposits sloping from north to south, around 703 m asl (Fig. 5.1). As mentioned below, the southern edge of this Neolithic settlement was dissected by large stone constructions of the Iron Age. Excepting for this Iron Age construction and a mixed surface layer, all cultural layers in this excavation yielded only Neolithic material.

Stratigraphy and structures

The surface of Operation B was covered with a modern mixed surface layer, measuring 0.3–0.5 m in thickness. Below this surface layer, thick Neolithic cultural deposits accumulated on the natural fan. These cultural deposits of Operation B were divided into many sub-layers in the eastern and northern sections. However, these deposits were categorized into six cultural layers based on the nature of the structures found (Fig. 5.1).

Layer 1 is the topmost layer just below the modern surface. Owing to the angle of the slope, this layer was detected only at the northern end of Operation B. The layer is 0.6–0.7 m thick and consists of alternating horizontally deposited dark-soft ashy layers and orange clay layers. No remarkable structures were found in this layer.

Layer 2 is c. 0.5 m thick and consists of brown hard soil and grayish soft soil. Although we noticed fragments of pisé walls in the sections, we could not clearly identify their plan during excavations. We presume that the pisé wall structures were seriously damaged and poorly preserved in this layer.

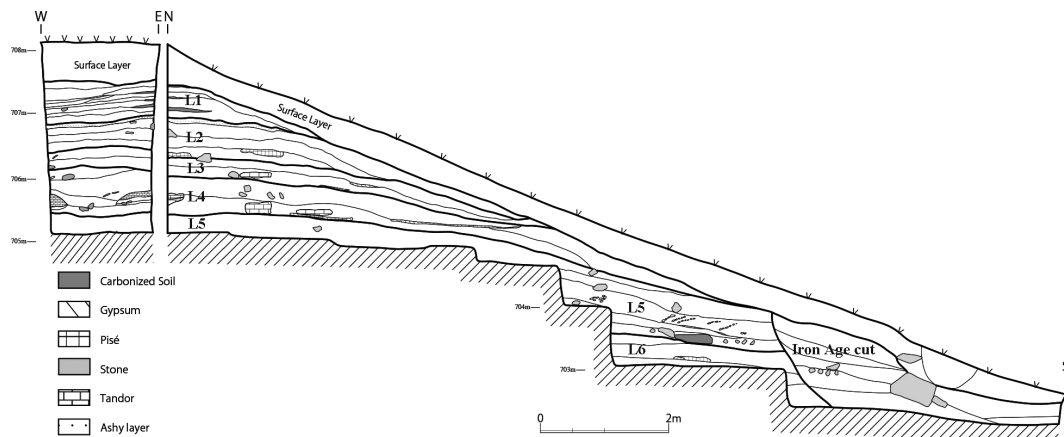


Fig. 5.1 East wall section, Operations B and D-1

Layer 3 is a relatively thin layer, measuring about 0.3 m in thickness. It consists of light gray ash and dull brown soil. We discovered a pisé wall (Str. 1) at the northern end of the trench. This structure marked the western corner of a rectangular pisé building (Figs. 5.2 left, 5.3). The wall is about 0.4 m wide, but we could not locate a floor inside this building. Another pisé wall, Str. 5, was discovered just below and besides Str. 1 (Figs. 5.2 left, 5.4, 5.5). This wall measures about 0.4 m in width and is over 0.3 m in height, running parallel to Str. 1. Besides these pisé walls, small patches of white gypsum were found in the same layer, and possibly indicate floor remnants.

Layer 4 is a dull brown and orange soil, c. 0.6 m thick, with various structures, such as pisé walls, *tandors*, and shallow pits. As imposed structures were discovered in this layer, the layer was divided into two upper and lower sub-layers. Structure 2 is a 0.4 m thick and c. 0.3 m tall pisé wall, running from northeast to southwest (Figs. 5.2 left, 5.6). At the northern end of Operation B, we found a series of *tandors* (Strs. 6, 7) (Figs. 5.2 left, 5.7, 5.8). They were oval or semi-rectangular in plan. Their surfaces were burnt and hard, comprising a thick orange burnt soil fringed by a yellowish orange soil. These *tandors* were certainly used for cooking in the manner of ovens. Just below Str. 6 another *tandors* was discovered (Str. 9, Fig. 5.8). East of this *tandors*, a small round gypsum floor was discovered (Str. 10, Fig. 5.8). This measures c. 1.0 m–0.8 m, being a few centimeters thick. In the middle part of the Operation, the southern corner of pisé wall (Str. 8) was discovered (Figs. 5.2 left, 5.8). Thus, we can state that layer 4 had abundant and imposed various structures.

Layer 5 is the lowermost layer in the northern part of Operation B, where we did not reach virgin soil. As we excavated only to a depth of c. 0.3 m, no remarkable structures were discovered here. We just found a shallow pit rimmed with a row of small stones (Str. 4, Fig. 5.2 right). At the southern end of Operation B, layer 5 is c. 0.9–0.8 m thick, consisting of dark-brown to reddish-brown soil. The southern end of this layer and the lowest layer 6 of Operation B, were dissected by Iron Age structures (Figs. 4.5, 5.1), which are discussed in section dealing with Operations A–D. Here, a pisé wall mixed with stones (Str. 3) was found (Figs. 5.2 right, 5.9). This wall is 0.4–0.7 m wide and had a right angled bend. The direction of the wall, the material used for construction (mixed with stones), and its width, differ from that of other pisé walls discovered in the upper layers.

Layer 6 was detected only in southern part of Operation B, where excavations were continued deeper. This layer is c. 0.4 m thick, comprising brown-grayish soil deposited just above the virgin soil. Besides fragments of the pisé wall, there was a single row of stones running from the northeast to the southwest (Str. 11). To its west, a patch of black carbonized soil was identified (Figs. 5.2 right, 5.10). The function of these structures is unclear. As mentioned above, layer 6 was deposited over the virgin soil, with a gradual transition from brown to greenish-brown in color (Fig. 5.11). The soil was sticky with many white inclusions. It was archaeologically sterile and comprised natural fan deposits.

Artifacts

With the exception of layers 5 and 6, potsherds were the most abundant artifacts discovered throughout the excavations. Layers 1–5 produced a total of 1917 potsherds (Table 5.1). The majority are dark-colored chaff-tempered thick coarse-ware body fragments (n = 1084). Fine-ware body fragments were also recovered, most of which were light-colored grit-tempered and lacking decorations (n = 223). Amongst the diagnostic potsherds, different characteristic decorations were recognized, *i.e.*, painted (n = 81) (Fig. 5.12:1–4), incised (n = 291) (Fig. 5.12:5), and painted-and-incised (n = 7) (Fig. 5.12:6). Preliminary studies led to the division of painted ware into three categories. Potsherds with a series of fine black or dark-red designs painted on a cream slip or greenish buff surface, may be classified as Samarra painted pottery (Fig. 5.13). These potsherds were discovered mainly in the upper layer 1. This layer also yielded a small quantity of another type of painted pottery,

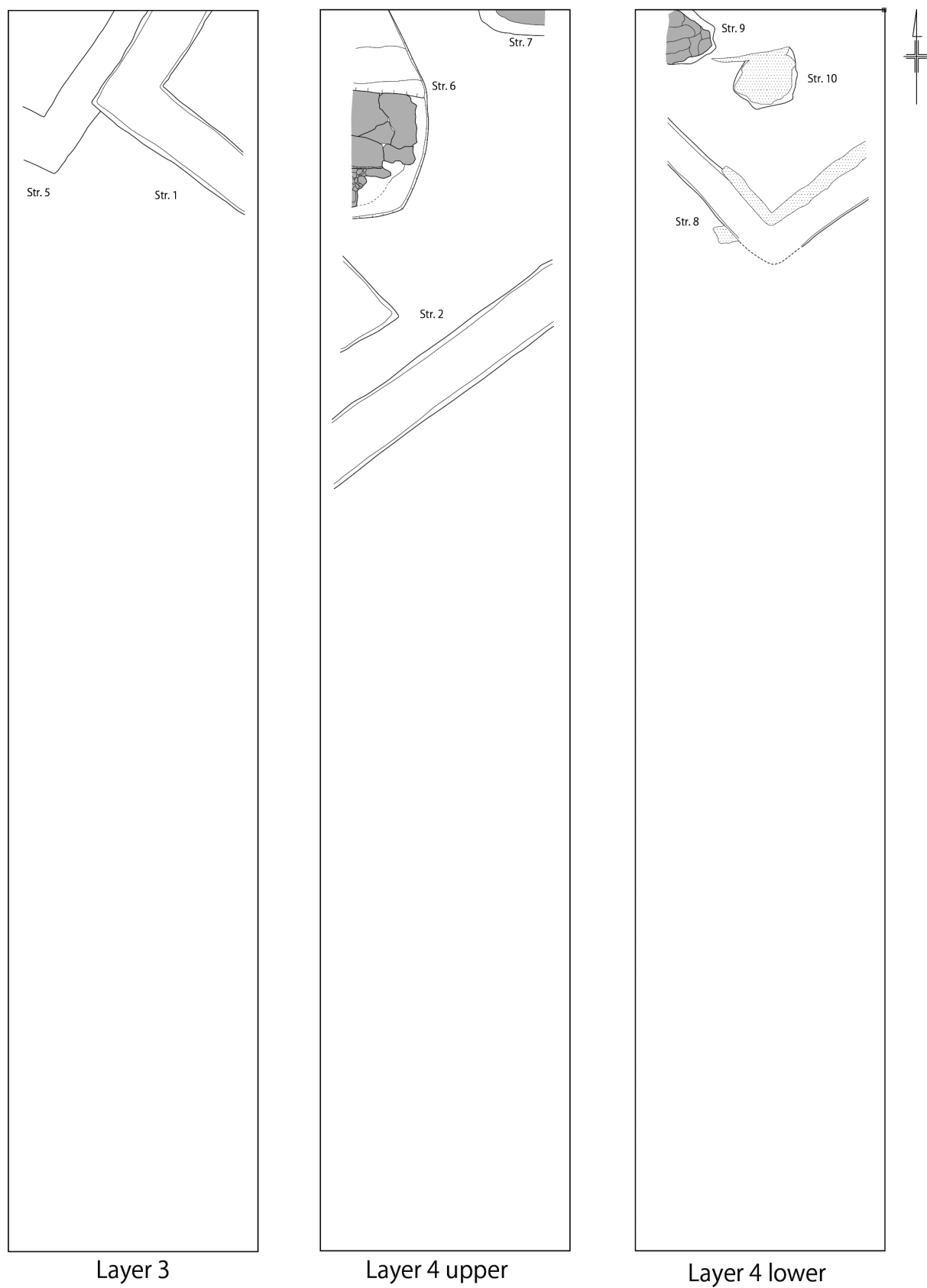
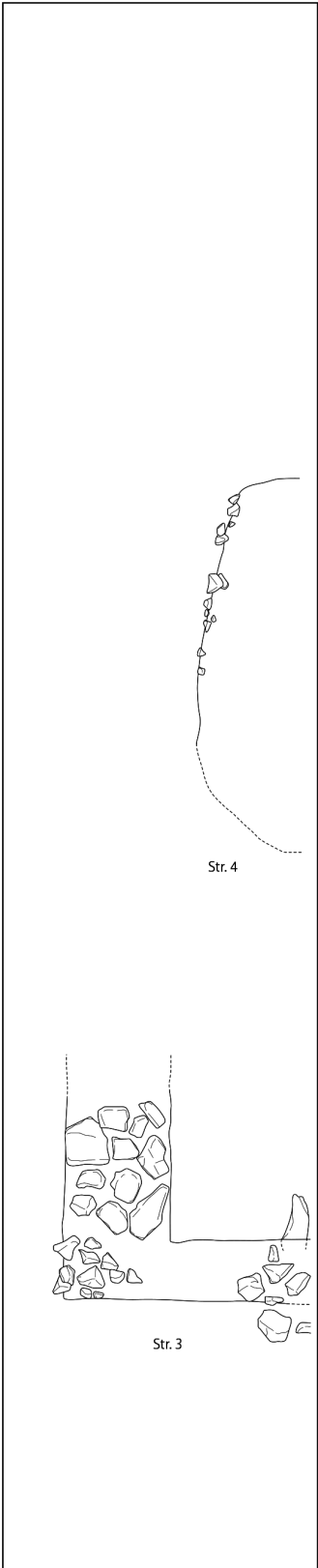
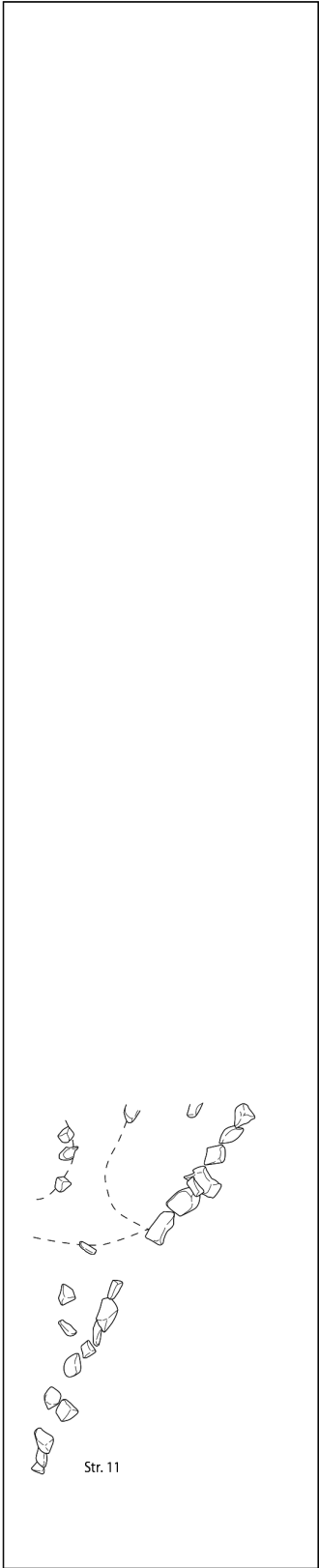


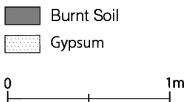
Fig. 5.2 Structures in



Layer 5



Layer 6



each layer, Operation B



Fig. 5.3 Str. 1 (pisé wall) in layer 3, Operation B (from the east)



Fig. 5.4 Str. 5 (pisé wall) in layer 3, Operation B (from the west)



Fig. 5.5 Str. 5 (pisé wall) in layer 3, Operation B (from the south)



Fig. 5.6 Str. 2 (pisé wall) in layer 4 upper, Operation B (from the east)



Fig. 5.7 Strs. 6 and 7 (*tandors*) in layer 4 upper, Operation B (from the east)



Fig. 5.8 Str. 8 (pisé wall), Str. 9 (*tandor*), and Str. 10 (gypsum floor) in layer 4 lower, Operation B (from the east)



Fig. 5.9 Str. 3 (a pisé wall mixed with stones) in layer 5, Operation B (from the east)



Fig. 5.10 Str. 11 (a row of stones and a patch of carbonized soil) in layer 6, Operation B (from the north)



Fig. 5.11 layer 6 deposited over the virgin soil, with a gradual transition from brown to greenish-brown in color (from the south)

Table 5.1 Number of classified potsherds in each layer of Operation B

	Non Diagnostic potsherds		Diagnostic potsherds									
Layer	fine	coarse	Painted	Painted and incised	Incised	Plain		Coarse plain				total
						rim	bottom	rim	bottom	stand	husking tray	
Layer 1	74	222	46	4	10	12	0	18	4	0	0	390
Layer 2	41	122	8	1	41	10	0	14	1	0	4	242
Layer 3	81	576	14	1	171	33	7	60	16	2	1	962
Layer 4	26	161	13	1	67	24	3	16	5	0	1	317
Layer 5	1	3	0	0	2	0	0	0	0	0	0	6
	223	1084	81	7	291	79	10	108	26	2	6	1917

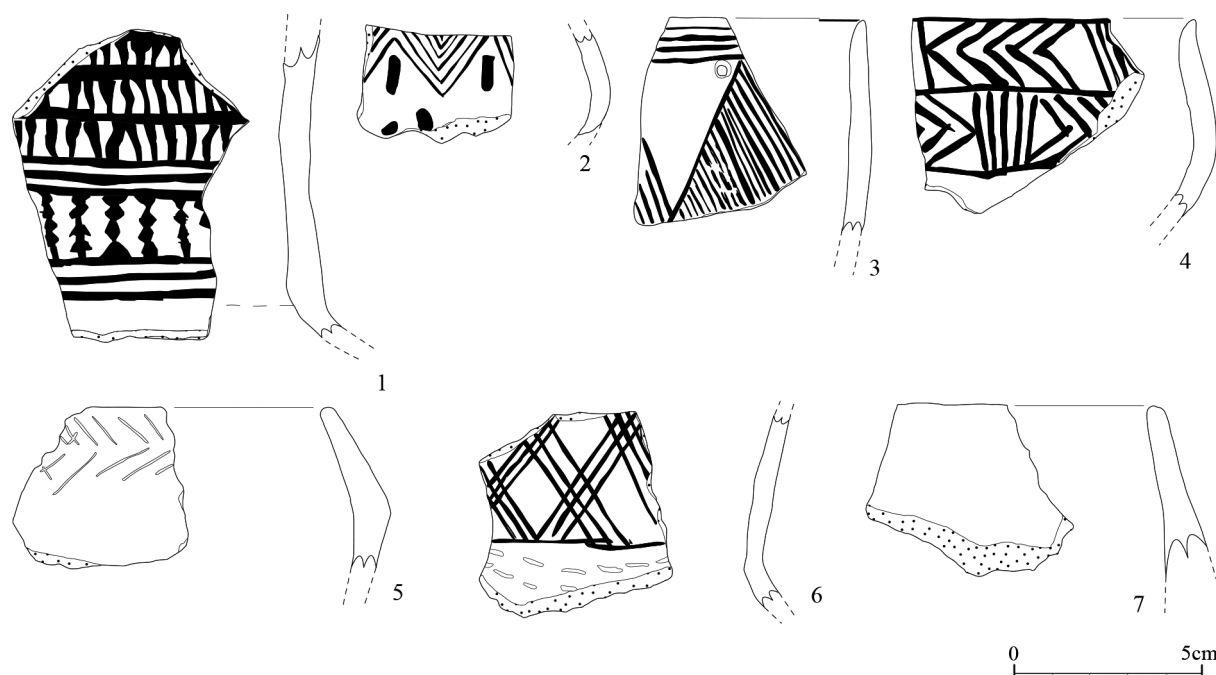


Fig. 5.12 Various type of pottery discovered from layers 1–4, Operation B
1–4. painted pottery; 5. incised pottery; 6. painted-and-incised pottery; 7. burnished pottery

decorated with fine parallel zigzag or chevron motifs on a buff surface or lustrous cream slip (Fig. 5.14). In layers 1–4, a greater number of roughly painted potsherds were noted (Fig. 5.15). Potsherds with incised decorations increased in number, in particular, in layer 3 (Figs. 5.16, 5.17). Potsherds with painted-and-incised decorations (Fig. 5.18) were also present in layers 1–4, although in small numbers. We suggest that these decorated potsherds (rough painted ware, incised ware, painted and incised ware) resemble the Hassuna pottery. However, in the lower layer 4, besides these Hassuna-type decorated potsherds, orange/light colored burnished potsherds (Figs. 5.12:7, 5.19) and chaff-tempered coarse plain potsherds were conspicuous. It is also notable that six pieces of a “husking tray” were discovered, four of which were from layer 2 (Fig. 5.20).

In addition to tiny chips obtained by sieving and floatation, 943 pieces of chipped stone were discovered in excavations of Operation B. Over half of these ($n = 501$) were from layers 5 and 6. Chipped stone artifacts discovered from layers 1 to 4 are relatively sparse. Flint formed the predominant raw material used for lithics, with less than 17% comprising obsidian. Flint flakes predominated in layers 1–4. A few lithic tools were recognized. Scrapers and sickle elements (Fig. 5.21:5, 6) were most conspicuous in these layers. Microblade cores and core fragments (Fig. 5.21:7, 8) and obsidian microblades (Fig. 5.21:9–13) were also discovered. A greater variety of flint and obsidian lithic tools were found in layers 5 and 6, including sickle elements (Fig. 5.21:4), scrapers (Fig. 5.21:1,2), serrated blades (Fig. 5.21:3), and points. Blade cores and hammer stones were also discovered in these layers, which certainly indicates on-site knapping at Qalat Said Ahmadan. Although five small potsherds were discovered in layer 5, they are probably intrusive. We suggest that the cultural deposits of Operation B, below layer 5, belong to the Pre-Pottery Neolithic period. The lithic industry is far richer and more varied in layers 5 and 6, as compared with that in the overlying layers 1–4. ^{14}C results (see appendix 2 in this report) also support the hypothesis that layer 5 belongs to the PPN period. Small objects discovered from Operation B will be discussed later.



Fig. 5.13 Samarra painted pottery

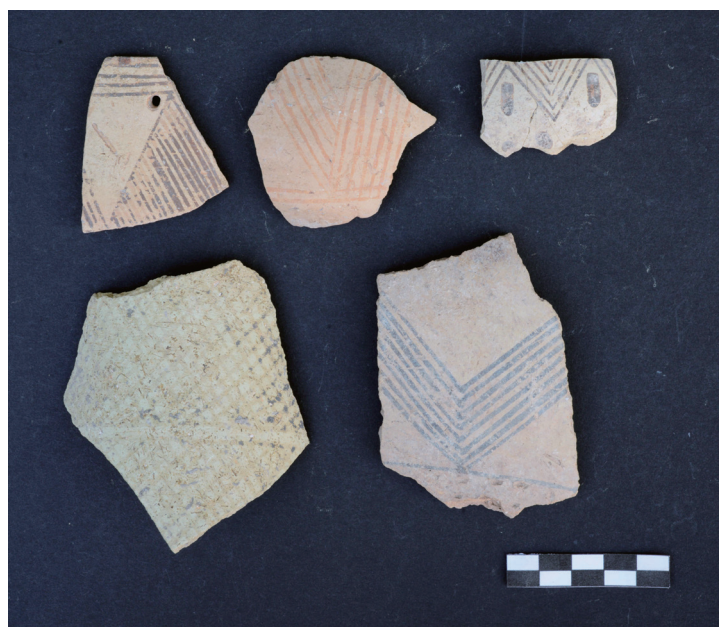


Fig. 5.14 Painted pottery with fine decoration



Fig. 5.15 Hassuna painted pottery



Fig. 5.16 Coarse incised pottery



Fig. 5.17 Fine incised pottery



Fig. 5.18 Painted-and-incised pottery



Fig. 5.19 Orange/light colored burnished pottery



Fig. 5.20 Coarse ware including so-called husking trays

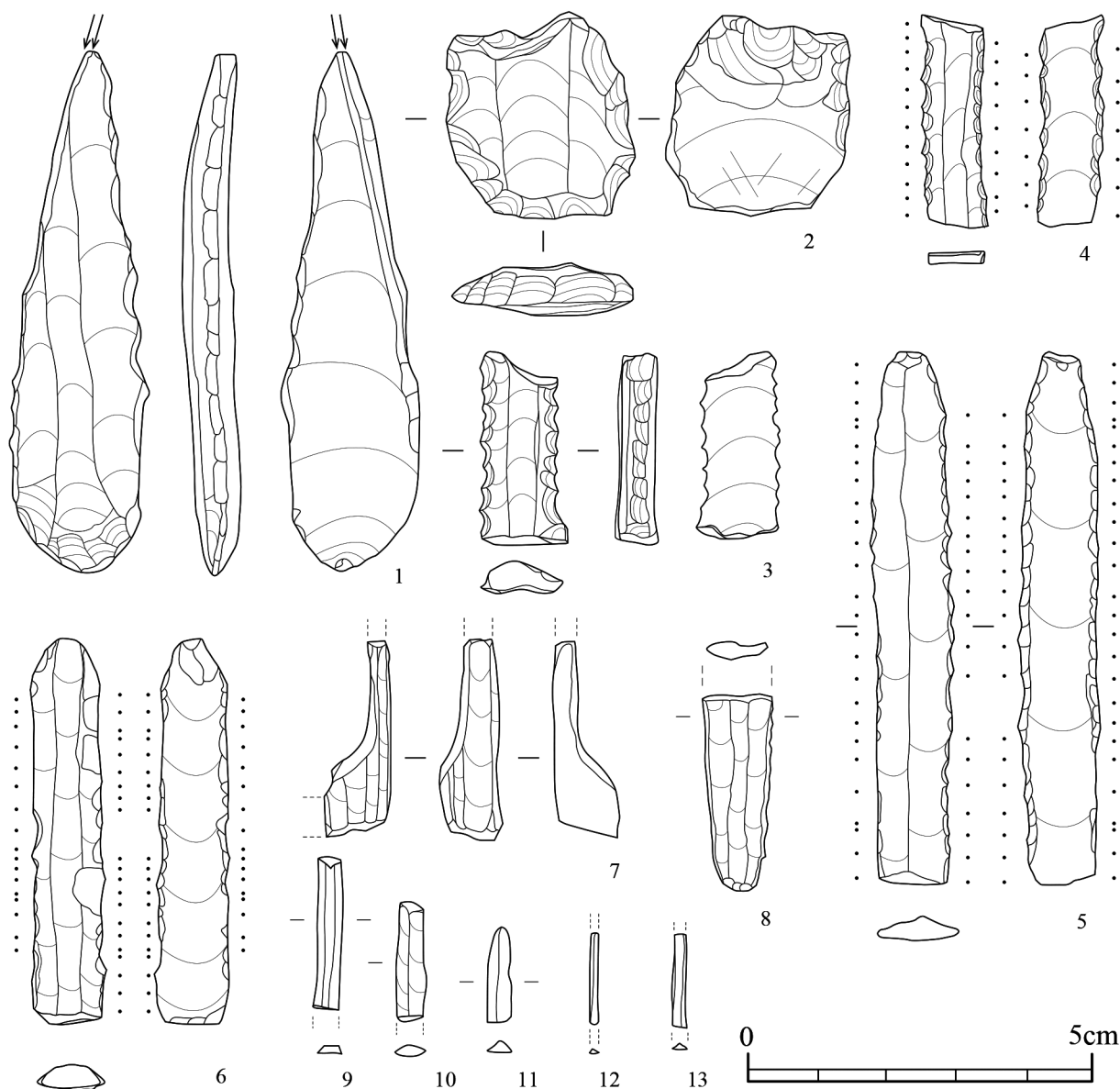


Fig. 5.21 Chipped stones discovered from Operation B

1–2. scrapers (obsidian); 3. serrated blade (obsidian); 4–6. sickle elements (flint);
7–8. core fragments (obsidian); 9–13. Microblades (obsidian)

Remarks

The middle terrace on the southern slope of Qalat Said Ahmadan was densely occupied by people of the PPN and the Pottery Neolithic periods. The cultural deposits and their contents are generally similar to those of the Hassuna period of Tell Shimshara, which is located 12km west of Qalat Said Ahmadan and was excavated in 1957 [Mortensen 1970]. Tell Shimshara seems to have the cultural sequences of the PPN and Hassuna-Samarra period, though Mortensen never asserted the existence of PPN cultural deposits in his report. He named the Neolithic layers of Shimshara, levels 16–9, as from the Hassuna period. However, the earliest levels 16–14 did not produce pottery and I suggest that these layers belong to the final phase of the PPN period. Operation B - layers 6 and 5 at Qalat Said Ahmadan are probably comparable with these layers, though our layers may date to older than Shimshara levels 16–14. ¹⁴C dating results from layer 5 of Qalat Said Ahmadan (see appendix 2) indicate that they belong to the PPN in the middle of 8th millennium BC.

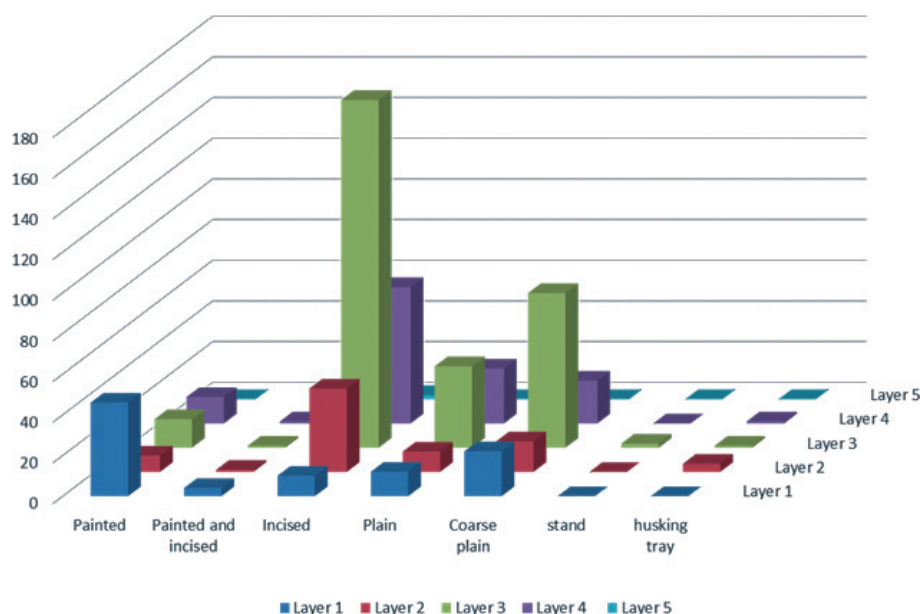


Fig. 5.22 Transition of pottery varieties in layers 1–4, Operation B

Shimshara levels 13–9 produced various kinds of pottery, including coarse ware (Undecorated Coarse Ware), burnished ware (Burnished Coarse Ware), painted ware (Archaic Painted Coarse Ware, Hassuna Painted Standard Ware, Samarra Painted Standard Ware, Samarra Painted Fine Ware), incised ware (Hassuna Incised Standard Ware), and painted and incised ware (Hassuna Painted-and-incised Ware, Samarra Painted-and-incised Standard Ware). The Neolithic pottery varieties from Operation B layers 4–1 at Qalat Said Ahmadan can be compared with these pottery. In a broad sense, they are comparable with pottery varieties of Tell Hassuna levels VI - I [Lloyd and Safar 1945], too. Though the transition of these pottery varieties at Tell Shimshara and Tell Hassuna is not clear, a general tendency is that the incised ware was more numerous in lower layers and painted ware, especially so-called Samarra ware increased in the upper layers. The same tendency occurs at Qalat Said Ahmadan (Fig. 5.22). ¹⁴C dating results indicate that Operation B layers 4–1 date to the last quarter of the 7th Millennium BC (see appendix 2). Therefore, we suggest that layers 4–1 belong to the Hassuna and Samarra periods.

However, as mentioned above, in addition to these Hassuna-type decorated potsherds, orange/light colored burnished potsherds and chaff tempered coarse ware were also present in layer 4. In northern Mesopotamia and Zagros, the Proto-Hassuna phase has been recognized in many sites, such as Tell Hassuna [Lloyd and Safar 1945], Matarra [Braidwood *et al.* 1952], Umm Dagachiyah [Kirkbride 1972, 1973, 1975], Yarim Tepe I [Merpert and Munchaev 1987], Tell Sotto [Bader 1989], Ginnig [Campbell and Baird 1990], Tell Kashkashok II [Matsutani ed. 1991], and Tell Seker al-Aheimar [Nishiaki, Y. and M. Le Mièrè 2005]. These Proto-Hassuna sites mainly produced light-colored chaff-tempered coarse ware. Therefore, we must further investigate the relationship between the Proto-Hassuna coarse ware and the chaff-tempered coarse ware from Qalat Said Ahmadan. For the moment, we recognize the chaff-tempered coarse ware of Qalat Said Ahmadan as the coarse ware variety from the Hassuna period. Though the orange/light colored burnished pottery seems similar to the Undecorated Fine Ware of Tell Shimshara [Mortensen 1970], we must further analyze this pottery to determine its chronological position.

In regard to the Neolithic lithic industry of Qalat Said Ahmadan, we point out the similarities and differences with that of Tell Shimshara (*ibid.*). The tool components between the two sites are similar, especially obsidian blades with a regular step, lamellar retouch (Fig. 5.21:3), [Mortensen

1970: Figs.36, 37] and long sickle elements with straight sickle gloss (Fig. 5.21:5–6), [Mortensen 1970: Fig. 27:9]. The evident difference between these industries is the material percentages. In Shimshara, mostly obsidian was used for chipped stones and less than 15% was flint [Mortensen 1970: 27]. In contrast to Shimshara, flint formed the predominant raw material used for lithics, with less than 17% comprising obsidian at Qalat Said Ahmadan. However, as flint dominates most Hassuna sites, such as Tell Hassuna [Lloyd and Safar 1945], Matarrah [Braidwood *et al.* 1952], material use at Shimshara was exceptional.

On the basis of the pottery and lithics, we tentatively assign each layer in Operation B to the following chronological phases:

Layers 1–4: Hassuna-Samarra phases

Layer 1: Samarra painted sub-phase.

Layer 2: Hassuna painted sub-phase.

Layer 3: Hassuna incised sub-phase.

Layer 4: Hassuna incised sub-phase mixed with Proto-Hassuna? materials.

Layers 5–6: Pre-Pottery Neolithic phases

As the Pre-Pottery Neolithic cultural deposits (layers 5–6) were discovered resting on natural fan deposits, we suggest that the PPN people first established their settlement at Qalat Said Ahmadan. At the very least, this PPN layer in Operation B may date back to the middle of the 8th millennium BC. Subsequently, the site was used intermittently, as a settlement by Neolithic people, especially in the last quarter of the 7th millennium BC. It is quite probable that Qalat Said Ahmadan provides us with a good cultural sequence for Neolithization and development of complex societies in Slemani region.

(Akira Tsuneki)

6. Operation C

Occupations after the Neolithic period were identified in Operations A, C and D. Here we first describe the earlier occupation in Operation C, followed by a discussion of the later occupation in Operations A and D.

The trench was laid out one meter to the north of Operation B and aimed at investigating the occupations after the Neolithic period. The trench was located on the steep slope of the mound, approximately 15 m from the edge of the mound top. The trench measured 2 × 4 m (EW-NS) and reached ca. 3 m deep at the northern edge of the trench.

The stratigraphy of the trench can be summarized as follows (Fig. 6.1).

Layer 1 (surface layer): Soft and loose soil with abundant pebbles. A white ash layer is noted towards the base of this layer.

Layer 2: Slightly packed reddish brown soil containing ash, charcoal, and gypsum grit.

Layer 3: Packed dull brown soil containing charcoal. Some amount of painted ware is observed here.

Layer 4: Packed dark brown soil containing ash and charcoal fragments.

Layer 5: Correspond with layer 1 in Operation B. It contains Painted Samarra ware.

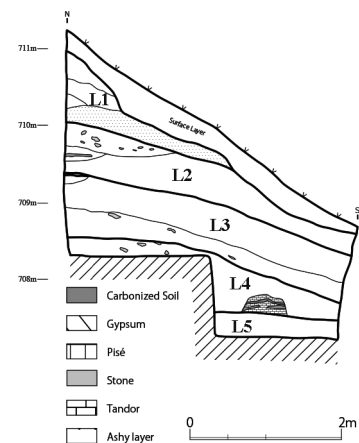


Fig. 6.1 East wall section, Operation C



Fig. 6.2 A hearth from layer 3, Operation C (from the west)



Fig. 6.3 Potsherds from Operation C presumably dated to the Bronze Age

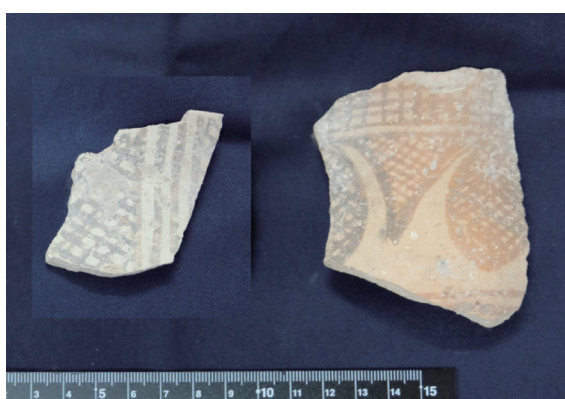


Fig. 6.4 Deep bowl with an S-shaped profile and cross-hatched pattern

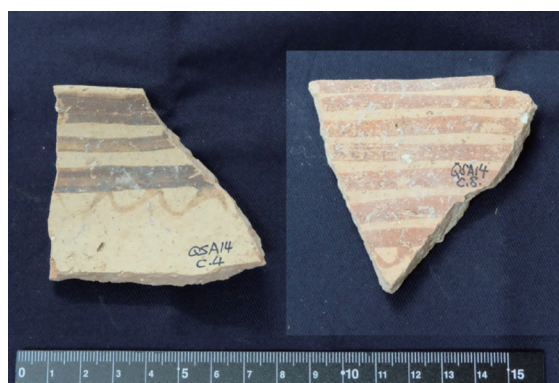


Fig. 6.5 Shallow bowl with horizontal bands and a wavy line

Structures

With the exception of three hearths, no major structures were found here. Two hearths were found in layer 3, and one in layer 4. One hearth in layer 3 was found in the western part of the trench, while the other was identified in the eastern part (Fig. 6.2). The former hearths measured 70 cm in diameter, while the latter had an oblong shape (ca. 80 × 40 cm) with ash pit placed in front of the fire-pit. The hearth in layer 4 was only identified in the eastern section.

No walls were found around the hearths. This may be owing to two reasons: 1) the excavated area was too narrow (ca. 2 m) to identify walls, and 2) as the trench was situated at a slope of the mound, the excavated area was obviously outside the residential zone. Further excavations are required to expose building structures in this part of the mound.

Artifacts

Most artifacts from the trench comprise potsherds. Since we have not studied the artifacts in detail, the description and interpretation given below should be regarded as tentative. Layers 1 and 2 contain a chronologically mixed assemblage. This comprises painted ware that may probably be assigned to the Neolithic (Incised Hassuna, Painted Hassuna and Samarran wares), which are intrusive and derived from layer 5 or even earlier. It also contains wares from the Chalcolithic period and Bronze Age. The volume of painted ware increases in layers 3 and 4. Painted ware from these layers bears both monochrome and bichrome decorations with motifs such as horizontal bands, cross-hatching, triangles and other geometric shapes. Motifs are painted in brick red, orange, reddish brown, and dark brown, while the fabric is often orange to buff/greenish buff in color. The fabric mostly contains

sand and white grit, but coarser chaff-tempered fabric also exists. Painted ware mainly consist of open-forms, *e.g.*, bowls, cups, and dishes. Unfortunately, the majority of potsherds from Operation C are not derived from a secure archaeological context, such as floor levels, pits and graves. Thus they are unsuitable for establishing a ceramic typology and chronology that limit their analyses.

We first assumed that the majority of potsherds from layers 3 and 4 belong to the Bronze Age (*i.e.* 3rd–2nd millennia BC). However, the radiocarbon dating suggests that layer 3 belongs to the mid-6th to early 5th millennia cal. BC (see appendix 2). Therefore, there is a contradiction between the age estimates inferred from the sherds and the radiocarbon dating analyses. Although we have not as yet studied the excavated sherds in detail, with many remaining unidentified, bibliographic survey on this topic suggest that some may be dated to the Early Chalcolithic period (ca. 5500–5000 cal. BC) of the Central Zagros region [Henrickson 1991; Moghaddam and Javanmardzadeh 2013]. On the other hand, there are some sherds which can be placed within the Bronze Age, owing to the presence of wheel marks and distinctive painted motifs. If these may be dated to the Bronze Age, the question remains as to why they occur mixed with Chalcolithic sherds. One reason for this might be the effects of soil removal cultivation occurring on the surface and slope of the mound, owing to which Bronze Age sherds penetrated into Chalcolithic levels. Having said this, we require further studies to explain this contradiction, since it is related to the important issue of site formation process of Qalat Said Ahmadan.

Brief observations on the ceramics for each period are summarized below. Bronze Age sherds were often wheel-made and have an orange to buff/buff green fabric. Painted ware bears both monochrome and bichrome geometric motifs (Fig. 6.3). Although we assume that some sherds belong to the early second millennium BC (*i.e.* Middle Bronze Age/Old Babylonian Period), no parallels have been found so far in existing literature. This is largely due to the fact that few publications exists on Bronze Age ceramics for the region around Qalat Said Ahmadan. Excavated sites located in the Dokan dam salvage area, remain largely unpublished. Thus, it is essential to describe and establish the nature of the Bronze Age ceramic assemblage and ceramic chronology of the Ranya and Pshdar plains.

In the Chalcolithic period, some specimens resemble to Halaf painted ware. Radiocarbon dating suggests situating this in the Early Chalcolithic period. Current research of the Iranian Chalcolithic period in the Central Zagros region, indicates that the Early Chalcolithic ceramic assemblages are not well described apart from the Mâhidasht-Kermânshâh valley system and the Kangâvar, Nehâvand, and Malâyer valleys [Henrickson 1991; Moghaddam and Javanmardzadeh 2013: 96–97]. Two distinctive wares of the above-mentioned areas are Shahnabad and J ware assemblages. However, these assemblages differ greatly from the Operation C sherds in form, fabric, and painted motifs. In addition, recent investigations at Lavin Tepe, West Azerbaijan province, Iran, ca. 50 km north of Qalat Said Ahmadan have revealed Dalma wares. However, so far no specimens that resemble Dalma wares, were identified in Operation C. In sum, based on this tentative observation, it seems that no Chalcolithic sherds, influenced from the Iranian side, were preset at Qalat Said Ahmadan.

On the other hand, some similarity is noted with the Halaf painted ware excavated in the Hamrin basin, ca. 200 km south of the Dokan Lake. The Halaf painted ware from Tell Songor A and B, appears to contain similar motifs. These include the following similarities: 1) deep bowl with an S-shaped profile and cross-hatched pattern in an oval shape, inverted triangles, and vertical bands (Fig. 6.4; *cf.* Kamada and Ohtsu 1993: Fig. 6. P.11, Fig. 7. P.20, 23, 27, Fig. 8. P.33; Matsumoto and Yokoyama 1995: Fig. 101. 616, and 618), and 2) shallow bowl with horizontal bands and a wavy line applied on the upper part of interior and exterior of the walls (Fig. 6.5; *cf.* Matsumoto and Yokoyama 1995: Fig. 103.636, and 637). The former, often has some thin horizontal bands on the interior lip. Halaf painted ware from Songor A and B are generally dated to the Late to Terminal Halaf periods [Tsuneki 2004: 132 Table 4.4]. Hijara [1980, Fig. 96] reports that there are nine sites in the Ranya plain,

which yielded Halaf painted ware. This may indicate that the area around Qalat Said Ahmadan is presumably well within the extent of the Halaf painted ware horizon. Furthermore, Tsuneki [2004: 133–34], who surveyed the Halaf sites in North Syria and North Mesopotamia, points out that the western foothills of the Zagros mountains seems to be the limit for the distribution of the Halaf painted ware with most sherds dating to the Late to Terminal Halaf periods. If layers 3 and 4 can be firmly dated to the Early Chalcolithic period, the Operation C sherds can contribute to the largely unknown ceramic assemblage of the western foothills of the Zagros.

Finally it is important to bear in mind that we are dealing with both distinctly local and interregional ceramic assemblages that developed in the border area of various ceramic cultural spheres. The foothills of the Zagros consist of complex valley systems and communication routes and various interactions occurred between both settled and nomadic populations [*cf.* Hole 2011]. Future investigations of the Qalat Said Ahmadan ceramic assemblage should consider such a complexity of interactions, keeping our perspectives open to a wide range of possibilities.

Conclusion

Operation C resulted in addressing the difficult issue of dating layers after the Neolithic. If we assume that radiocarbon dating is correct, then the Early Chalcolithic layer, which may include Halaf painted ware, lies above the Samarra occupation. However, there are some sherds which could be assigned to the Bronze Age. As we have only conducted a preliminary observation of excavated finds, further studies will hopefully provide better interpretations and explain the significance of layers revealed in Operation C.

(S. Nishiyama and A. Hasegawa)

7. Operations A and D

Here we describe and discuss the Iron Age and Post-Iron Age occupation revealed in Operations A and D. There were laid out below Operation B, along the lower terrace of the mound (Figs. 4.4 and 4.5). Two Operations were located next to each other and each measured 2 × 10 m (EW-NS). The maximum depth reached was ca. 2 m below the surface.

Operation A was originally aimed at identifying the Neolithic occupation. This is the reason it was laid out along the lower part of the mound. However, as mentioned below, we encountered unexpected structures dating to a much later period (Iron Age and Post-Iron Age). During the excavation, it became apparent that the structures were constructed on virgin soil and that Neolithic occupation was absent over most of lower terrace of the mound.

The stratigraphy of the two Operations can be summarized as follows (see the eastern wall section in Figs. 4.5, 5.1 and 7.1).

- Layer 1 (surface layer): Soft and loose soil with abundant pebbles. This layer yielded heavily weathered Post-Iron Age sherds.
- Layer 2: Fairly packed reddish brown soil containing charcoal and gypsum grit. Some stone clusters appeared in this layer.
- Layer 3: Fairly packed layer containing gravel and small stones. Stone clusters dating to the Iron Age began to appear here.
- Layer 4: Very hard layer containing abundant gravel and heavily weathered potsherds. A second stone structure dating to the Iron Age was excavated here.
- Layer 5: Very hard reddish brown clay layer, which had a greater viscosity than any of the upper layers. Foundations of the third stone structure were seen in this layer.

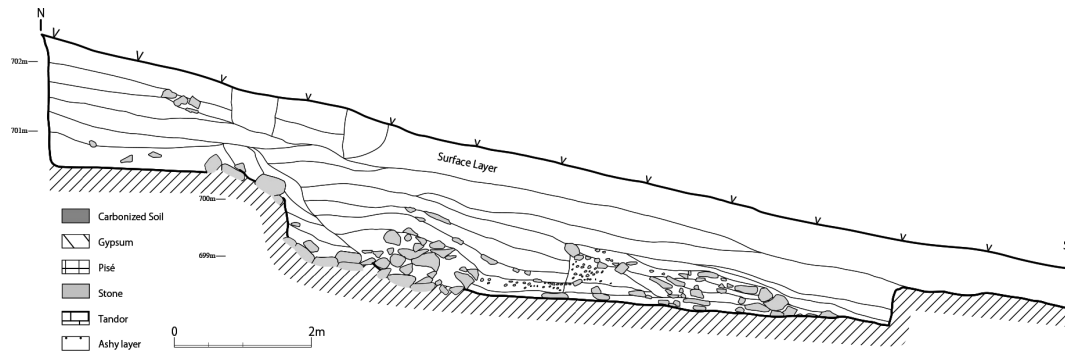


Fig. 7.1 Eastern wall section, Operations A and D-2



Fig. 7.2 First stone structure in Operation A (from the south)



Fig. 7.3 Third stone structure in layer 5, Operations A and D-2 (from the south)

Stone Structures

(1) First Stone Structure

The first stone structure was encountered in both Operations A and D, and consists of stone clusters comprising stones, ca. 30–40 cm in size. The stone clusters were unearthed ca. 50–60 cm below the surface (Fig. 7.2). The clusters do not seem to be arranged in the form of a wall. Between the clusters there seem to be a gap of ca. 40–70 cm. The length of each cluster varies from ca. 80 cm to 2.5 m. In Operation A, at least four stone clusters were identified within the 2 m wide trench.

If we look close, it seems that the stone clusters appear to form a belt pattern resembling bunds on the slope of the mound. Presumably these stone clusters formed parallel belts, and functioning as retaining walls for preventing soil erosion on the lower skirts of the mound. These stone clusters

have not left traces on the NS sections of the trench. This indicates that the structure was constructed with a low profile, *i.e.*, no more than one or two rows of stones. Thus, these clusters were certainly not meant for defense of settlement.

(2) Second Stone Structure

After removing the first stone structure, the second stone structure appeared in layer 3, at ca. 1.2 m below the surface. This structure again consists of belts of stone clusters. A relatively large ditch (ca. 4 m wide and ca. 60–70 cm deep) was observed just below the stone clusters (see the eastern wall section in Fig. 7.1). This ditch may have functioned as a “moat” for protecting the occupation on the mound. The lower layers of the “moat” consist of numerous pebbles and sand. In addition, potsherds found in the lower part of the layer were heavily weathered and fragile. Base on this, we suggest that it is highly probable that the moat once held water, or was in a water-logged condition for some time. We still do not know whether this moat surrounded the entire mound or not, but it is suggested that there was some defense system present during the time of layer 3.

(3) Third Stone Structure

Below the second stone structure, we encountered the final or third stone structure in Layer 5 (Figs. 7.3, 7.4). This structure consists of walls and stone pavements. We do not know the entire extent of the structure, but at least two major walls run parallel in a NW-SE direction (Fig. 7.4). One is located at the northern end of the structure in the southern part of Operation D. The wall measures ca. 80 cm in thickness. Adjacent to the south of the wall, a stair-like structure (consists of five steps) was identified, continuing down to the south, ca. 1.7 m below the northern wall described above (Fig. 7.5).

Some partly damaged stone pavements were unearthed extending to the southern wall, which was found in the northern part of Operation A. The wall measures ca. 80 cm in thickness, and runs in a similar direction to that of the northern wall. The distance between the two walls was ca. 4.1 m. There appears to be a partition-like wall, ca. 30 cm in thickness and made up of a single row of stones, perpendicular to the southern wall, forming at least two rooms/spaces within the structure. The floor of the west room was paved with stones, ca. 20–30 cm in size.

Immediately to the south of the southern wall, a kiln (*tandor*) was unearthed (Figs. 7.4, 7.6). It was constructed directly on a flat stone and had a round plan with a diameter of ca. 70 cm. Within the kiln, fragments of wall and pottery were found in cluster. Another kiln was found further to the southeast of the first kiln (Fig. 7.4). Both kilns were constructed to the south of the southern wall, implying that, this space lay outside the structure, and was thus in the open. Although it was in the open, we observed a stone cluster, extending at least ca. 2.3 m south of the southern wall. Owing to time constraints, we were not able to determine the extent of this stone cluster. However, as we were able to observe bedrock outcrop ca. 10 m south of Operation A, we presume that the stone cluster did not extend this far.

As mentioned above, layer 5 consists of a large stone structure which seems to extend towards the east and west. When we reached layer 5, the soil became clayey and very compact. Potsherds buried in this soil were heavily weathered and very fragile. In order to investigate the earlier phase, underlying the stone structure, we decided to remove the stone cluster which extends to the south of the southern wall. The stones were placed directly on the compact clayey soil. No larger stones were identified below the stone cluster. We took a core sample just to the south of the southern wall, and noted that the bedrock lay ca. 3 m below the surface. It seems likely that the compact clayey soil below layer 5 is virgin soil, and that the stone structure was built directly on it.

Data from the northern part of Operation D has revealed the relationship between the Iron/Post-Iron Age occupations and the Neolithic layers in Operation B. The Neolithic occupation was dissected

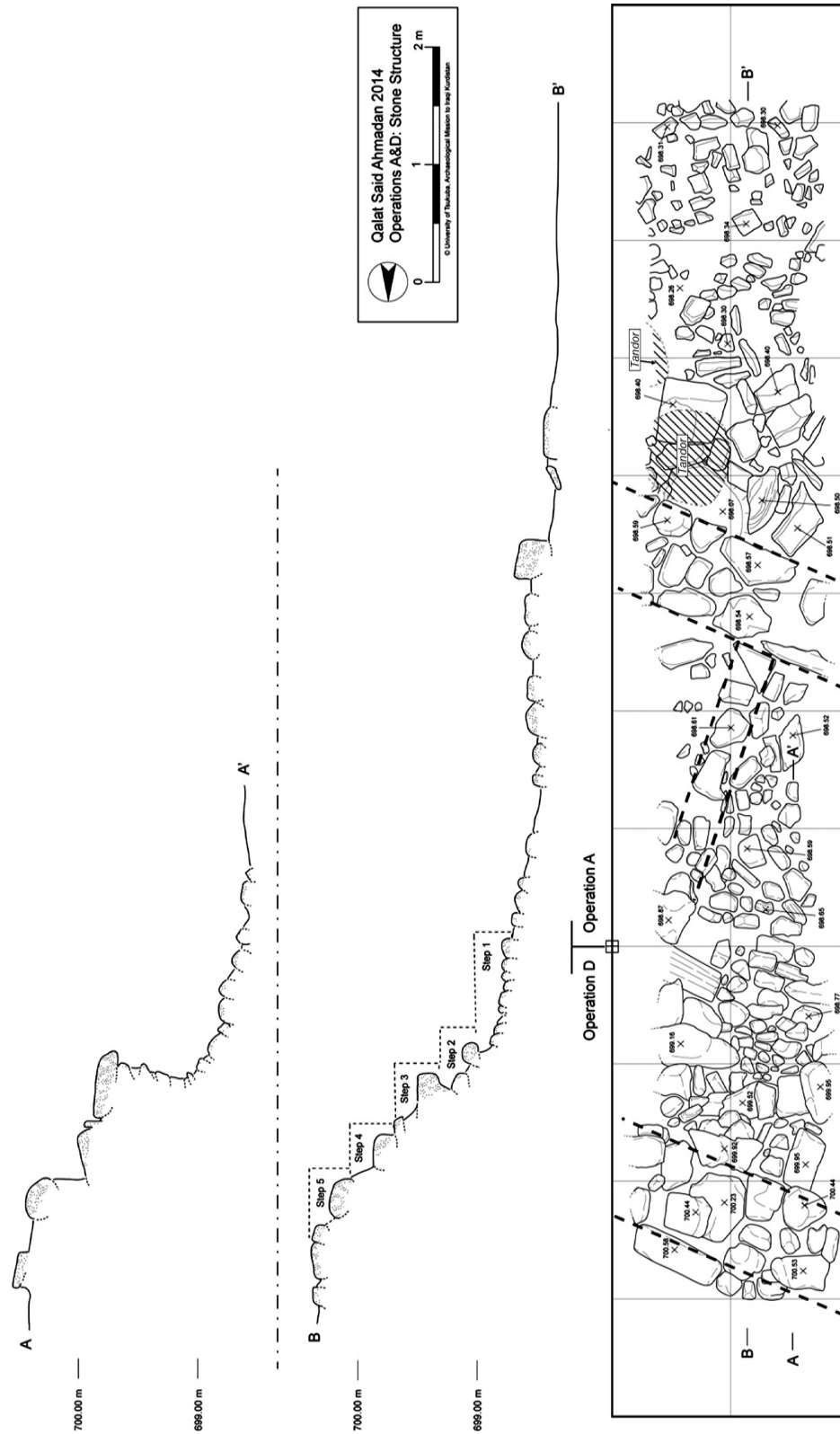


Fig. 7.4 Plan and elevations of the third stone structure in layer 5, Operations A and D-2



Fig. 7.5 Northern wall of the third stone structure (left) and the stair-like structure to the right in Operation D-2 (from the west)



Fig. 7.6 A kiln (*tandor*) found just to the south of the southern wall of the third stone structure in Operation A (from the west)

by layers 2 and 3 of Operations A and D. This fact suggests that the Iron Age stone structures were constructed by cutting into Neolithic layers. Nevertheless, it seems that this was not significant. This is because layers in Operations A and D did not contain abundant Neolithic sherds and other artifacts. If Neolithic layers were greatly disturbed by the Iron/Post-Iron Age construction activities, we would expect more Neolithic artifacts mixed within the Iron/ Post-Iron Age layers. This fact also suggests that the Iron Age stone structures were constructed by digging into the virgin soil which surrounds the mound.

Artifacts

Artifacts from Operations A and D, largely comprise potsherds. Few flaked stone artifacts in flint and obsidian were collected, although these appear to be intrusive from the Neolithic layers further up the slope. Other than potsherds and flaked stones, a large stone saddle quern (Fig. 7.7), spindle whorls, and a few metal objects were unearthed.

As mentioned above, most potsherds were heavily weathered and very fragile. Although further analysis is required, the pottery can be dated to the Iron Age (first half of the first millennium BC) and Post-Iron Age (Persian/Hellenistic Period). The chronology was largely confirmed by radiocarbon dating which suggested an age of 8th–5th centuries BC (see appendix 2).

Potsherds from Layer 1 contain mixed sherds including Neolithic, Iron Age, and Post-Iron Age, it seems that layers 2 and 3 potsherds consist of more Post-Iron Age sherds. Types include a large storage jar with a squared profile rim, an unguentarium-like bottle with a pedestal, and some thin-walled fine ware.

Potsherds from layers 4 and 5 mainly consist of Iron Age pottery (Figs. 7.8, 7.9). The types include large storage jars with thickened rims (both flattened and squared in profile), storage jars with a large ridge on the exterior, out-turned rim cooking pots, thickened rim cooking pots, flattened rim bowls, jars with a ridged handle, and grooved rim jars. Most sherds have an orange colored fabric with sand and white grit inclusions. There are very few painted wares, but some sherds show possible traces of a red slip. We do not, as yet, have parallel types from the surrounding region, but some forms are similar to the Iron Age pottery of North Mesopotamia [*cf.* Hausleiter and Recihé 1999].

Note on the Iron Age Stone Structure

The above mentioned impressive Iron Age stone structure consists of two parallel walls. It seems that this structure was part of the “defense system” to protect what was constructed on the mound top, probably a fort. According to the geophysical survey (see Section 10 in this report), the stone structure appears to extend over the southern foothill of the mound, if not the entire surroundings. It is still unknown whether the stair-like structure in the northern part functioned as the entrance to an enclosed inner space, surrounded by the structure. At the moment, we infer that the structure had a roof supported by the two walls, somewhat resembling “casemate walls” encountered in the Iron Age of the southern Levant. The construction of the stone structure must have required a large labor force, probably transporting stones from the surrounding *wadi* beds.

It is indeed improbable to believe that this Iron Age structure, that was time-consuming to construct, functioned as a defense system, as Qalat Said Ahmadan is a small mound (ca. 2 ha). If this structure was constructed for military purpose, it must have a strong reason to place it at Qalat Said Ahmadan. The center of the defense system must have been located on the top of the mound, and we suggest that the Iron Age occupation of Qalat Said Ahmadan was a highly military character.

According to textual sources, during the Iron Age, especially between the 8th–7th century BC, the region around Qalat Said Ahmadan was probably under the rule of the Neo-Assyrian Empire. In the first regnal year of Ashurnasirpal II (884/883 BC), the conquest of Tammu is mentioned (RIMA



Fig. 7.7 Saddle quern (lower stone) from layer 3, Operation A (from the east)



Fig. 7.8 Iron Age large storage jar rims and a ribbed shoulder, Operaton



Fig. 7.9 Iron Age cooking pot and jar rims, Operation A

2: 196–7). Liverani [1992: 19] argues that the location of Tammu was in the Ranya plain. Thus, it is highly possible that the Assyrians arrived in the area around Qalat Said Ahmadan. Later textual evidence is from the reign of Sargon II (722–705 BC). Lanfranchi [1995: 136] proposed that the town of Anisu was in the Pshdar plain, while the town of Harrania should be modern Ranya. Therefore, during the 8th century BC, the Pshdar plain was presumably under the Assyrian control.

Despite this evidence, we still do not know for what reason the settlers of Qalat Said Ahmadan constructed such stone structures around the mound. Taking into consideration the location of Qalat Said Ahmadan in the foothills of the Zagros, overlooking the Pshdar plain as well as the Darband-i Ramkhan pass towards the Ranya plain, we suggest that the settlement probably had a strategic character, as a vantage point for observing people moving between the Zagros and from the Ranya plain. At the moment, it is too premature to speculate on the nature of the population and political force of the Iron Age Qalat Said Ahmadan. Nevertheless, we argue that the strategic location of

Qalat Said Ahmadan was important for both local as well as interregional political forces.

Conclusion

Operations A and D revealed the Iron Age and Post-Iron Age occupations, that dissected the Neolithic horizons to some extent, but which were largely constructed on natural soil surrounding the mound. Such large scale structure was probably used as part of the defense system to protect the fort constructed on the top of the mound. Although it is difficult to identify who constructed the fort, the site was strategically located and undoubtedly important for controlling communication routes connecting the Zagros and the Ranya plain. The Iron Age stone structure was probably destroyed by the end of the Iron Age (7–6th century BC), but was transformed into a “moat” or “retaining wall for soil” and continued to be used into the Post-Iron Age.

(Sin-ich Nishiyama)

8. Small objects

Small objects discovered in excavations at Qalat Said Ahmadan (2014 season) were classified into the following categories: 35 stone objects, 8 bone objects, 15 clay objects, and 5 metal objects. Most were found in Operation B, and a few small objects were found in other Operations. The majority of the post-Neolithic objects have not yet been studied in detail. Thus, we mention only the selected objects here.

Stone objects: There are 5 hammer-stones (Fig. 8.1:1), 5 stone vessels, 8 stone bracelets (bangles), 3 beads, 1 quern (Fig. 8.1:2), 1 spindle whorl, 1 axe, 4 polished stones, and 7 unspecified objects. Two hammer-stones were found at Operation B in the Neolithic layer and three hammer-stones were found at other Operation grids in mixed layers. Stone vessels were of marble or pink marble and were of variable thickness (Fig. 8.1:3). A flat base fragment of a stone vessel, had oblique, thick-walled sides. This form is similar to some stone vessels found from level 15 of Tell Shimshara [Mortensen 1970] and layers 7–8 of Operation J-I of Jarmo [Braidwood *et al.* 1983]. Neolithic sites of northern Mesopotamia and Syria, such as Tell Sotto, Tell Maghzaliyah, Yarim Tepe I and II, Kultepe [Yoffee and Clark 1993], Tell Thalathat [Fukai, Horiuchi and Matsutani 1970, Fukai and Matsutani 1981], Tell Arpachiyah [Mallowan and Rose 1935], Umm Dabaghiyah [Kirkbride 1973], Tell Kashkashok [Matsunati 1991], Tell Seker al-Aheimar [Nishiaki and LeMière 2005], Umm Qseir [Tsuneki and Miyake 1998], and Tell Sabi Abyad [Akkermans 1996], also produced many stone vessels. However, these had round bases quite unlike those found at Qalat Said Ahmadan.

Some fragments of stone bracelets were found, mainly from layers 3, 4 and 5 of Operation B. Most were made of marble, having well-polished surfaces. Their cross-sections varied in shape, *i.e.*, circular, oval, ovoid and flattened. The circular or ovoid cross-section bracelets had a diameter of 9–12 mm. Similar stone bracelets were found from other sites such as Tell Shimshara, Jarmo, Karim Shahr, Tell Maghzaliyah, Tell Sotto, Kul Tepe, Yarim Tepe I, and Tell Seker al-Aheimar. Stone bracelets with circular or ovoid cross-sections found at Qalat Said Ahmadan, are remarkably similar to those discovered at Tell Shimshara, Jarmo, Karim Shahr and Tell Maghzaliyah.

Some small objects discovered from Neolithic layers of Qalat Said Ahmadan are similar to those found from Neolithic sites in this region, such as Shimshara and Jarmo. Therefore, we may suggest that these were typical of the Neolithic period of Kurdistan.

Bone objects: Eight bone antiquities were found, and all were partly broken. From the remaining fragments, they appear to represent 3 spatulae, 4 awls (Fig. 8.1:6) and 1 unspecified object. A spatula

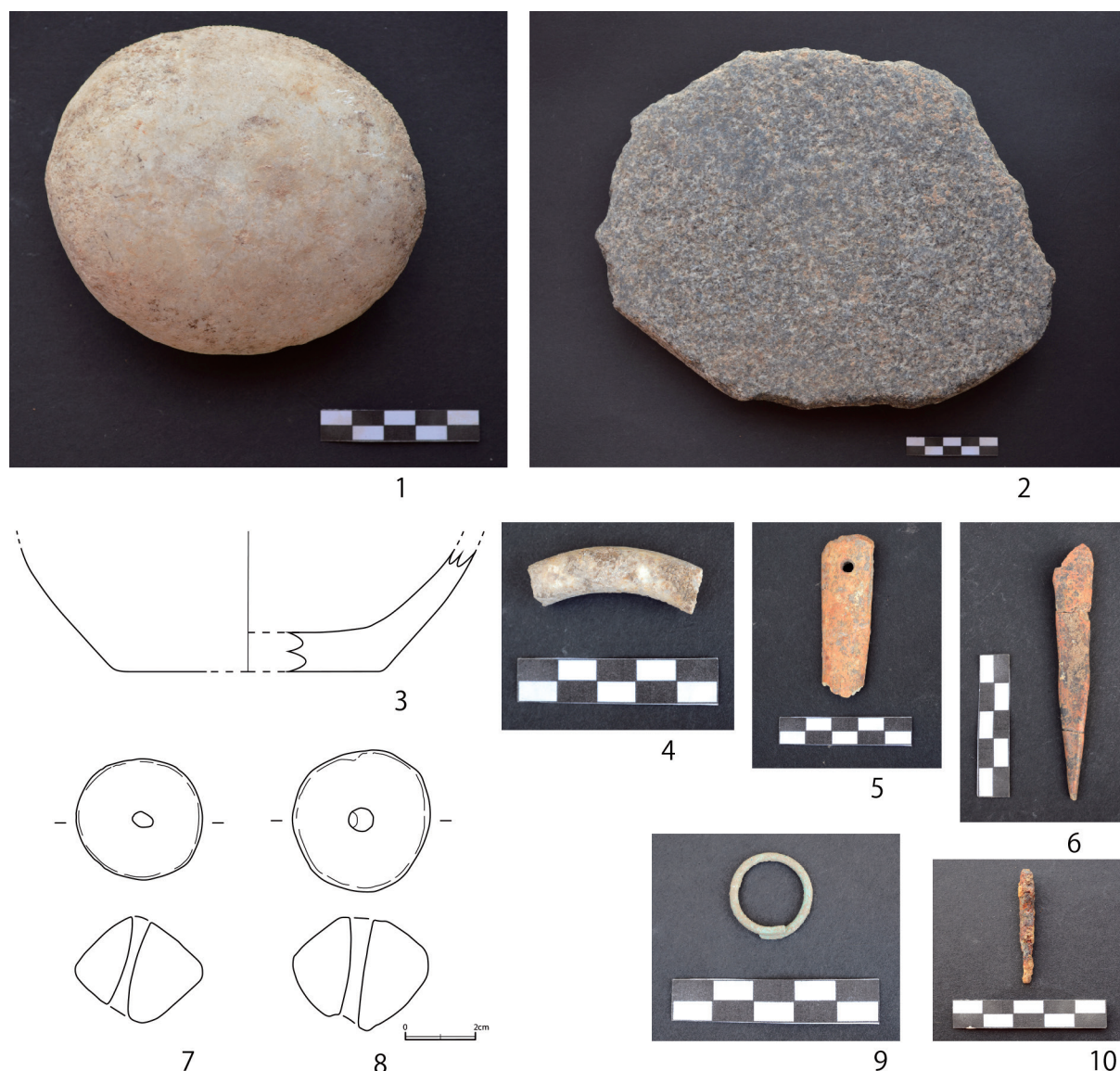


Fig. 8.1 Miscellaneous small objects found from Operations

found from Operation B had a hole near one end (Fig. 8.1:5), and is similar to that found at Shimshara [Mortensen 1970].

Clay objects: Fourteen clay objects were found. They include 7 rings, 5 spindle whorls, 2 figurines (heads) and 1 unspecified object. The diameter of the clay rings varies, with the outer diameter falling between 14.5–29 mm and the inner one between 4–13 mm. All spindle whorls were double conical in shape and similar in size (Figs. 8.1:7, 8.1:8). One of the two clay figurines comprised a broken human head. It had typical applique eyes, common to the Samarra clay human figurines. The other clay figurine appears to be an animal head.

Metal objects: Five metal objects were found. These include 1 bronze ring (Fig. 8.1:9), 2 nails (Fig. 8.1:10) and 2 pieces of slag. There were found in Operation D-2. The existence of metal slag may indicate the presence of metal smelting at the site.

(Yudai Kudo)

9. Animal bones

More than 2400 fragments of animal bones were found from Qalat Said Ahmadan. All layers, except layer 1 of Operation C, contained animal bones, but more than 1700 were found from the Neolithic layers of Operation B.

A preliminary analysis at the site pointed to various body parts, with long bones predominating. The bones were mostly fragmented and species-level identification was difficult.

Identified animals comprised caprine, cervus, bos, sus and canis. Artiodactyla predominated in the sample. They were observed from all layers. Turtles, fish bones, and bivalves were also found, although in smaller numbers. It appears that aquatic resources were not greatly consumed by the people of Qalat Said Ahmadan.

The fauna found from each Operation is listed below. Animal bones from Operation A have not been analyzed. Further archaeozoological studies are required in this respect.

Operation B

Various body parts of artiodactyla were noted. Turtle remains were found from only layers 1 and 3 of Operation B. Only three fragments of bivalves were found in layer 1. Layers 5–6 yielded more than 1700 animal bones, with numerous large vertebrae. Large numbers of bones were found from the upper levels of layer 5, including large and well preserved remains. Identifiable fauna were artiodactyla. A large quantity of burnt bones was found from the concentration of carbides. They were mostly fragmented and difficult to identify.

Operation C

No bones were observed in layer 1. Various body parts of artiodactyla were noted.

Operation D-1

Here too, various body parts of artiodactyla were noted.

Operation D-2

We noted various body parts of artiodactyla.

Table 9.1 Number of animal bones excavated from each layer

	Layer	Number of bones
Operation B	1	119
	2	78
	3	263
	4	168
	5–6	1162
Total		1790
Operation C	1	0
	2	104
	3	54
Total		158
Operation D-1	1	103
	2	45
	3	8
Total		156
Operation D-2	1	9
	2	139
	3	44
	4	35
	5	13
Total		240
Total of all		2344

Table 9.1 provides the number of animal bones excavated from each layer.

(Yuko Miyauchi)

10. Geophysical surveys at Qalat Said Ahmadan

Introduction

As a part of the archaeological research project at Qalat Said Ahmadan, Ground Penetrating Radar (GPR) and magnetometric surveys were conducted at the site. Magnetometric surveys form one of

the non-destructive geophysical techniques recently being used to investigate archaeological sites. This technique can reveal the existence, position, or plan of structures by examining magnetic anomalies measured from the surface of the site. GPR surveys also form a useful non-destructive technique in archaeological research. This technique measures differences in the degree of reflection and time taken for a radar pulse to reflect off subsurface archaeological artifacts and features, occurring at varied depths, and accordingly aids in revealing and mapping them. We used a Fluxgate Gradiometer FM256 by Geoscan Research for the magnetometric surveys, and a Pulse EKKO Pro 500 MHz antenna by Sensors & Software for the GPR surveys.

The condition of the site for the survey

This site is an artificial mound surrounded by modern structures and roads. The northern slope of the mound is close to modern houses, and some areas, especially on the western slope, are used as modern garbage pits. Over most of the surface of the mound, and along the foot of the southwestern slope, there are huge pits that were once used as military missile or antenna bases. This condition is not suitable for magnetometric and GPR surveys. Therefore, we surveyed the surface that was not greatly disturbed by pits, and also the western part of the southern and southeastern slope.

In preparation for this investigation, we first laid down grids with a north-south axis parallel to the excavation trenches, and then carefully cleaned the surface of the area to be surveyed.

Results of the magnetometric survey

The magnetic plan of the mound from the Magnetometric survey is illustrated in Fig. 10.1. Essentially, high contrast black and white colors display a magnetic anomaly. Along the slope of the mound, we obtained relatively good results, although there were some modern iron spikes left at the site. On the northern edge of the southwestern area, in the northern part of the southeastern area and on the southern edge of the southeastern area, there are high magnetic anomalies in belts. This seems to represent huge ancient walls, such as a rampart, comprising large stones, along the contour lines of the site. Moreover, a relatively high anomaly can be seen in some parts of the middle of the southeastern area. This result indicates that at least more than two ancient walls surrounded the mound in the past.

The result on the surface of the mound is not so clear because of the presence of modern garbage containing iron. However, it is noted, that there are some anomalies in the eastern part that seem to be archaeological remains. In the northeastern part, there are some anomalies indicating a rectangular-like shape extending from the northwest to southwest. And there are linear anomalies in the middle of the eastern part. We cannot accurately identify what they are, but considering the degree of the anomalies, it is possible that they represent some remains of walls of rectangular stone buildings.

Results of the Ground Penetrating Radar survey

The radar reflection plan of the whole mound is shown in Fig. 10.2; while Figs. 10.3 and 10.4 display time slice maps of the southern slope and of the surface, respectively. The degree of reflection is shown with a contrast of black and white colors.

Along the slope, we can see some lines of high reflection, similar to the results of the magnetometric survey. In the southeastern area, three such lines are clearly seen from 0.3 m to 0.7 m below the surface. The first one is in the center, the second is north of the southern edge, and the third is on the southern edge of the survey area. These reflections seem to correspond to tall parts of stone steps that were discovered in the excavated trench.

In the southwestern part, on the other hand, reflections of the walls are not clear, although they can be slightly identified. They are detected at a shallow depth of up to 0.4 m below the surface.

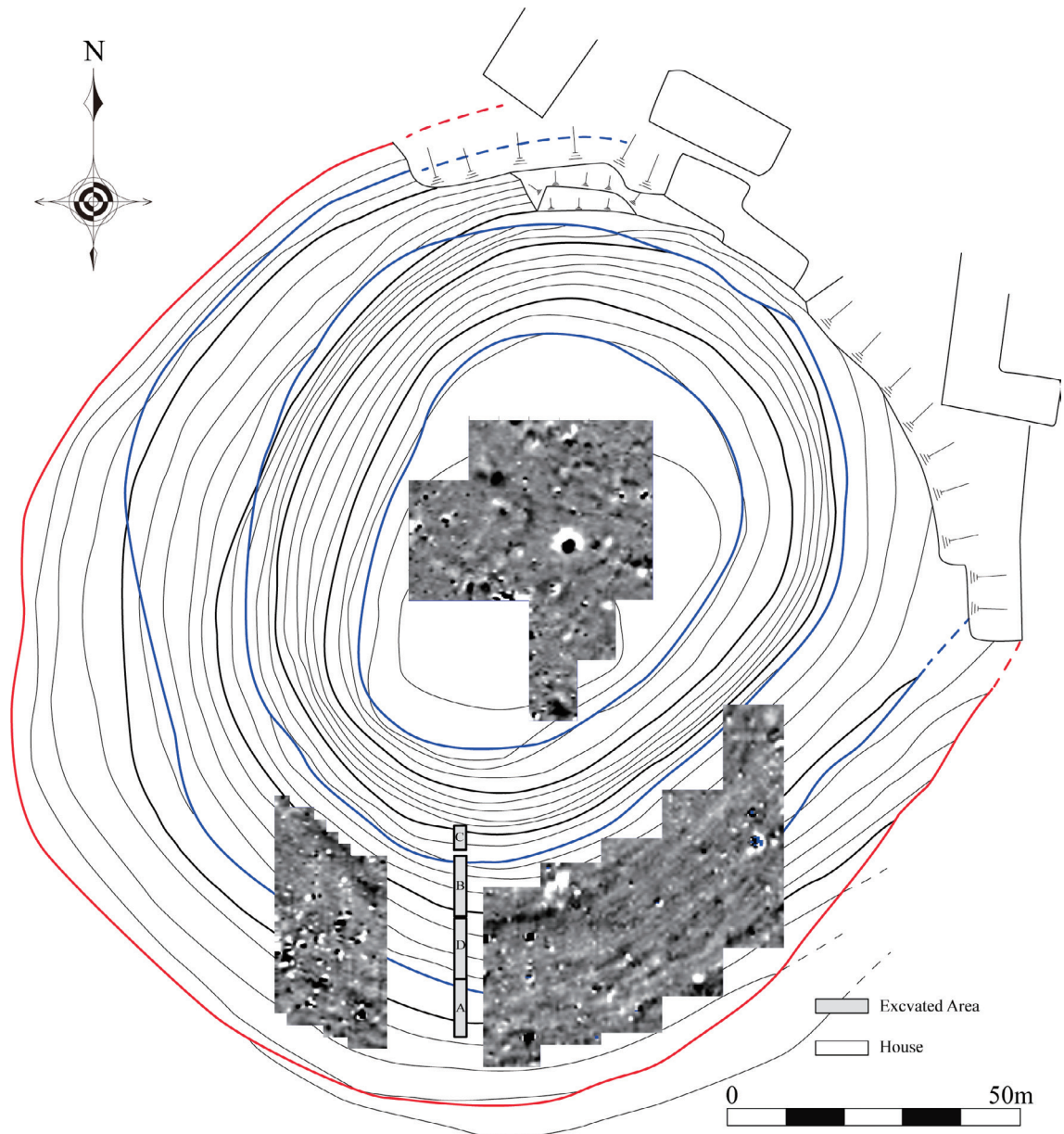


Fig. 10.1 Magnetic map of Qalat Said Ahmadan

This indicates that when the walls were built, the original level of the eastern part was lower than the western part. Further, over long time periods, the western walls were destroyed and the eastern walls were covered with soil; thus, both parts occur at almost the same level today. Therefore, the western walls may not appear very clearly because of the background “noise” of stones scattered from the original walls. Thus, the extension of the walls surrounding the southern slope of the mound, can be recognized clearly, although some parts of the walls were destroyed or disturbed.

On the surface of the mound, the GPR results also show many reflections, which have a linear-shaped plan along the northwest-southeast axis, and its orthogonal axis, at depths of 0.3 to 1.0 m not only in the eastern but also in the western part. Further, a circle-like reflection can be seen near the northern edge of the survey area at the same depth. It is suggested that all structures were constructed using relatively large stones, as inferred from the strength and shape of the radar reflection. We may regard them as representing the remains of ancient buildings. One rectangular room measures around 7×7 m. A circular one has a diameter of 5 m. However, many parts of

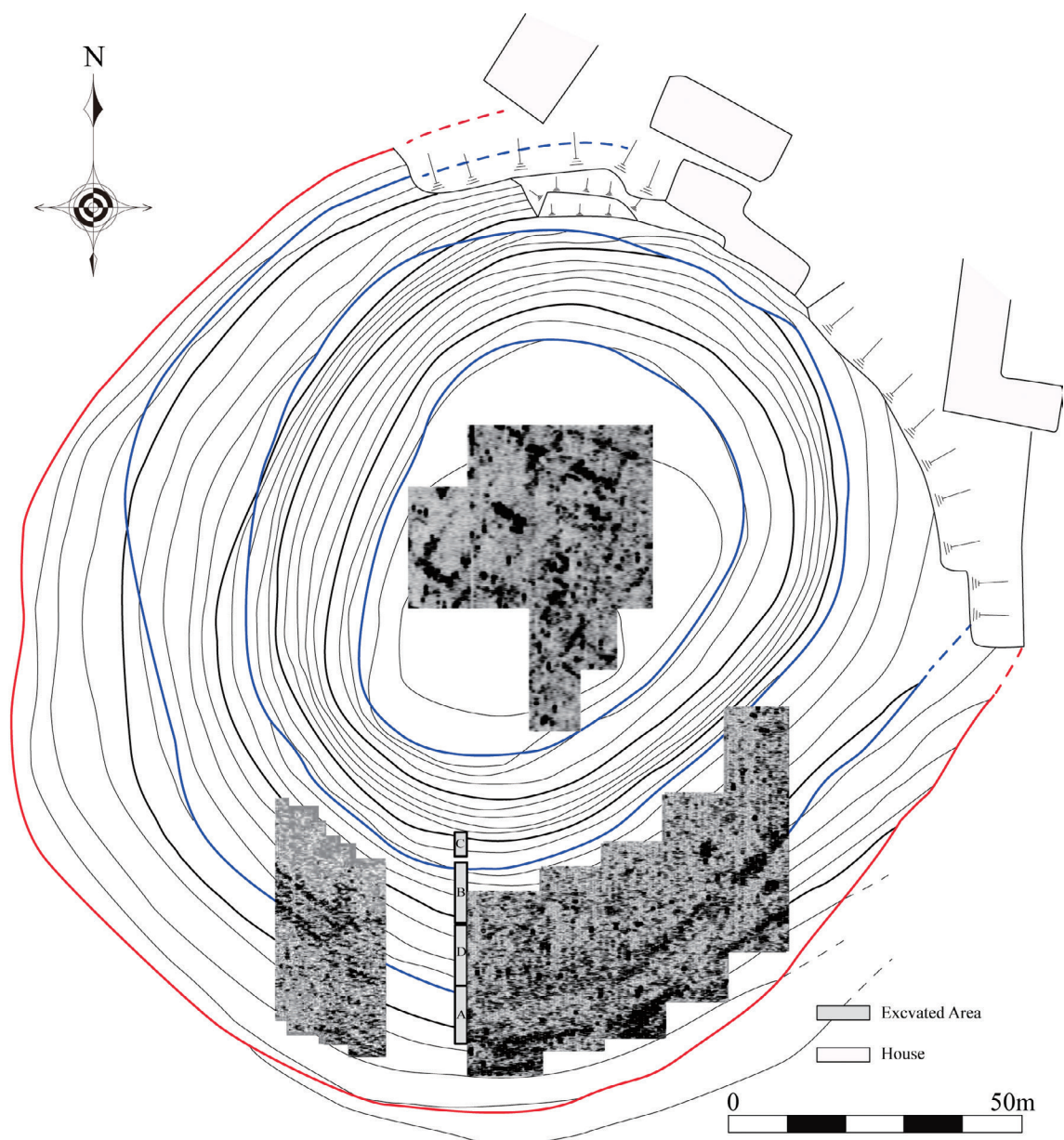


Fig. 10.2 GPR reflection of the map of Qalat Said Ahmadan (in optional depth in each area)

these buildings were unfortunately destroyed at the surface, so that we cannot recognize all their plans.

Conclusion

From our geophysical surveys at Qalat Said Ahmadan, we propose two possibilities. First, this mound was surrounded by three or more concentric rampart-like stone walls or steps, at least along the entire southern slope. Geophysical surveys could not reveal large stone pavements that were excavated along the southern slope. This is due to the depth of the pavement below the surface, which rendered it difficult for magnetometric and GPR surveys to measure weak anomalies or reflections from deeply buried features. Therefore, it is possible that the stone pavement also extended along the stone walls.

Second, the results at the surface indicate that some ancient buildings had rectangular plans along the same axis as each other. There was also one contemporary circular building that had a different

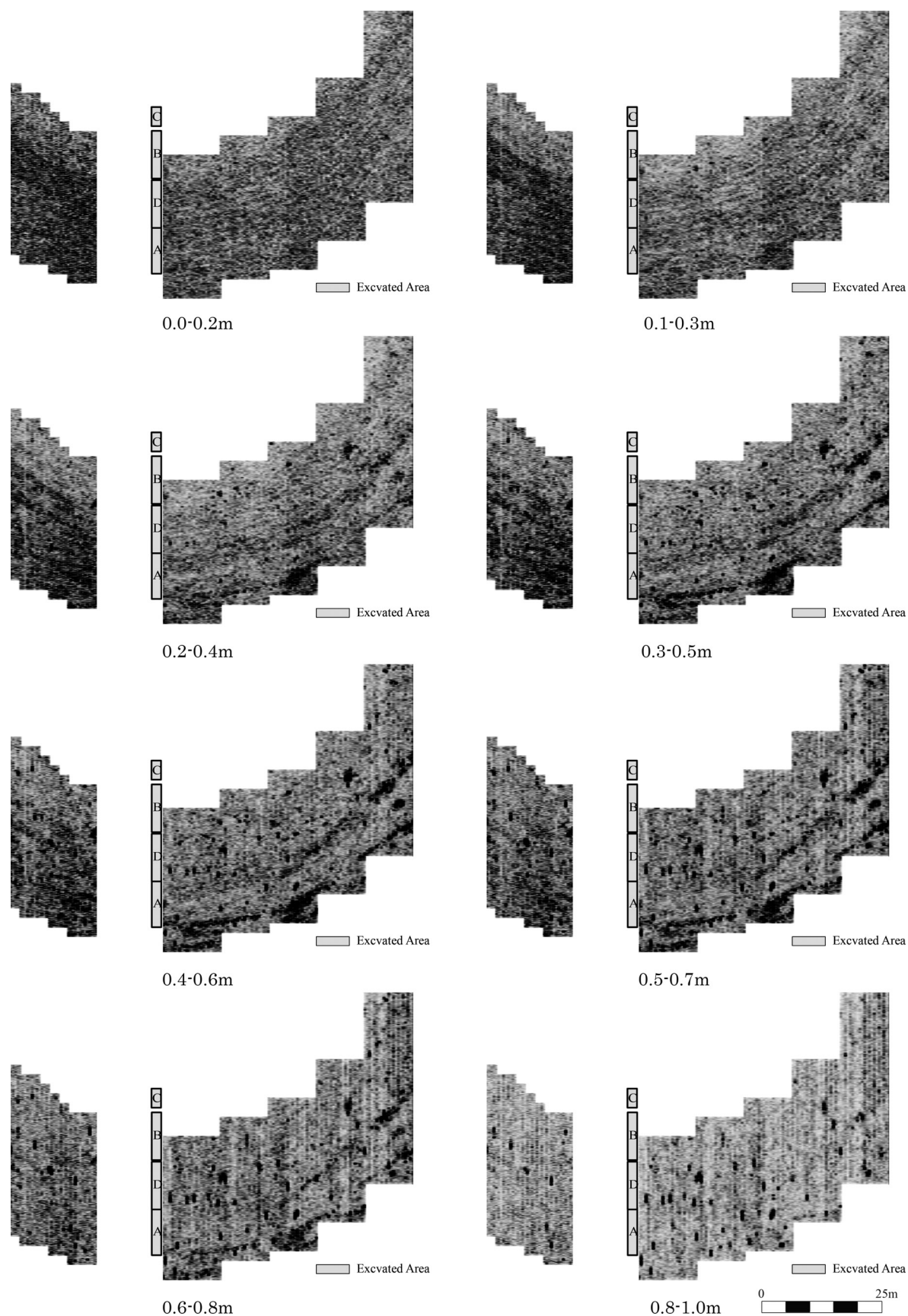


Fig. 10.3 GPR time slice of the southern slope (the dimension in meters below each slice indicates the depth below the surface)

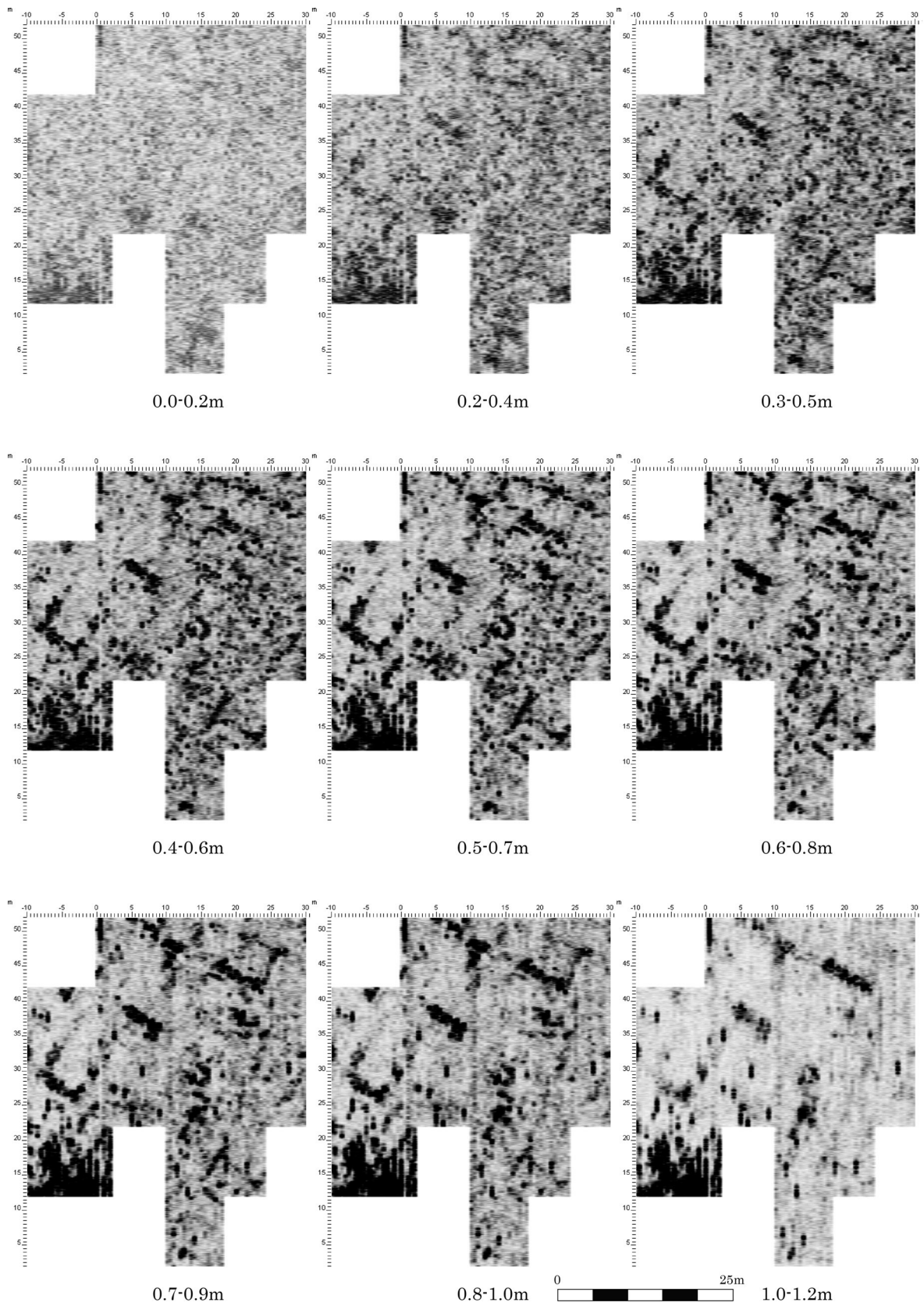


Fig. 10.4 GPR time slice of the surface (the dimension in meters below each slice indicates the depth from the surface)

function from the others in the mound. These buildings probably belonged to the Iron Age, based on studies of surface collections. During this period, however, there are no examples of similar circular buildings in this region.

Though Qalat Said Ahmadan was relatively small in size, it must have been a very important site, as it was defended by triple barriers. Further archaeological research would reveal the nature of facilities in these buildings, and the functions of the site of Qalat Said Ahmadan in the ancient period.

(Yuki Tatsumi)

11. Concluding remarks

The results of the first season's excavations at Qalat Said Ahmadan exceeded our expectations. These studies led to the following conclusions:

- 1) Acquisition of materials for research on the development of early farming societies in Iraq-Kurdistan.

As mentioned in the introduction, study of Neolithization in the Near East is not complete without explication of the Neolithization process in Iraq-Kudsistan, one of the heartlands of the eastern part of the Fertile Crescent. We discovered an intermittent cultural sequence, ranging from the late phase of the Pre-Pottery Neolithic up to the Pottery Neolithic period in Operation B at Qalat Said Ahmadan. This sequence does not seem to include the earliest Neolithic deposits, but it covers the sequence from the middle of the 8th millennium BC to the early 6th millennium BC. It provides us with materials for study of the development of early farming societies in Iraq-Kurdistan, and we will contribute to understanding of the Neolithization process by undertaking further study on this cultural sequence.

- 2) Discovery of large Iron Age stone architecture and its possible function as a defense system. One of the unexpected finds of the excavation was the Iron Age grand stone structure in Operations A and D at the foot of southern slope of the mound. This is at least 9 m long and about 2 m high, comprising two parallel walls, steps, and pavements. It seems that this structure was part of a "defense system" to protect other structures on the mound top, probably a fort. A geophysical survey indicates that the stone structure appears to extend over the southern foothill of the mound. If this is the case, the top of the mound was fortified by double / triple defensive systems. Therefore, we suggest that this defense system was made and utilized for military purposes. Qalat Said Ahmadan is located where its inhabitants could view the Darband-i Ramkhan pass between the Ranya Plain and Pshdar Plain, which lead to the Zagros highland from the Mesopotamian lowland. Such a strategic location certainly pushed the people to build a fort at Qalat Said Ahmadan during the Iron Age. At present, it is premature to speculate on the nature of the population and political authority in the Iron Age at Qalat Said Ahmadan. However it may relate to military conflicts between Media and Assyria, and this large stone construction stimulated our theorization of Kurdistan history.

- 3) Materials for establishing a long local chronology from the Neolithic to the Iron Age. Operations A–D provided us with material for establishing a local chronology from the PPN through the Chalcolithic, Bronze Age to the Iron and Post Iron Ages in the Ranya-Pshdar region. After carrying out further material analysis, we will establish a local chronology for Iraq-Kurdistan. We believe that this chronology can support other archaeological missions who are now undertaking general surveys to determine the history of Iraq-Kurdistan.

We have just begun our excavations at Qalat Said Ahmadan, and further research will provide excellent material on the prehistory and history of this region. We hope to continue our research in collaboration with Kurdish and Japanese colleagues.

(A. Tsuneki and K. Rasheed)

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